

To: micah_chambers@ios.doi.gov[micah_chambers@ios.doi.gov]; Doug Domenech[dougdomenech@gmail.com]; doug_domenech@ios.doi.gov[doug_domenech@ios.doi.gov]; scott_hommel@ios.doi.gov[scott_hommel@ios.doi.gov]
From: Megan Bloomgren
Sent: 2017-01-30T17:32:27-05:00
Importance: Normal
Subject: Fwd: heads-up on a BOEM news release slated to go later this week or next
Received: 2017-01-30T17:42:25-05:00
[BOEM DRAFT Press Release Cook Inlet PNOS LS244 01302017 fq.docx](#)

Let's discuss. Need to ensure that this is flagged for Murkowski's office. Would love to get her read.

----- Forwarded message -----

From: **Quimby, Frank** <frank_quimby@ios.doi.gov>
Date: Mon, Jan 30, 2017 at 1:56 PM
Subject: heads-up on a BOEM news release slated to go later this week or next
To: Megan Bloomgren <(b)(6)>, Heather Swift
(b)(6)>, Douglas Domenech <douglas.w.domenech@ptt.gov>

The Bureau of Ocean Energy Management (BOEM) is asking us to review the attached draft news release, announcing a "Proposed Notice of Sale" for oil and gas development offshore Alaska. This a step toward a proposed June 2017 actual sale but there are other steps that preceded this one (final Environmental Impact Statement on proposed sale) and the next steps would follow this one, including a Final Notice of Sale (which contains the detailed terms of the sale). All are done with notices to Alaska State officials, who can comment on the proposals.

This sale may generate significant media interest because it is the final scheduled sale in the BOEM/DOI Five year Offshore Lease Sale Program (which ends this year) and a new program is scheduled to begin this year and run to 2021. Technically this is not in the Arctic but it is in Alaska, which doubtless welcomes it as the state seeks to recoup some energy revenue/development after the recent downturn in energy prices which depressed production and exploration in Alaska and lowered state revenues. Some enviros will oppose this sale, as usual, but not as vigorously as they oppose Arctic oil and gas lease sales.

BOEM will send us a Communications/Rollout Plan with Talking Points tomorrow and a Frequently Asked Questions and Answers document by mid week and is looking for suggested edits or revisions and getting a green light to issue the release later this week or early next. The language of the release is standard but if desired we can suggest (b)(5)
(b)(5) The timing of the release is dictated by regulations for public comment as each step progresses. This release announces a 60-day public review and comment period...and then BOEM examines those....and the Final Notice of Sale has to be published 30 days before the June sale.

Contact:

john.callahan@boem.gov
907-334-5208

For immediate release

XXXX

BOEM Publishes Proposed Notice of Sale for Potential Cook Inlet Lease Sale

ANCHORAGE, Alaska – The Bureau of Ocean Energy Management (BOEM) today announced it plans to offer approximately 1.09 million acres in Cook Inlet off Alaska’s southcentral coast in a proposed lease sale this year.

Cook Inlet Oil & Gas Lease Sale 244, scheduled to take place in June 2017, would offer 224 blocks toward the northern part of the Cook Inlet Planning Area for leasing. The blocks stretch roughly from Kalgin Island in the north to Augustine Island in the south.

“Following a robust environmental analysis, we are moving forward with the Lease Sale 244 process,” said Walter Cruickshank, BOEM’s acting director. “We look forward to hearing Governor Walker’s comments and recommendations as we continue to balance environmental considerations with careful development.”

The Proposed Notice of Sale is available via the Federal Register Reading Room ([LINK](#)) and at www.boem.gov/ak244. It will be published in the Federal Register tomorrow, (DATE).

BOEM also sent the Proposed Notice of Sale to Alaska Governor Bill Walker for a 60-day review and comment period.

This sale would be the final one in the Department of the Interior’s 2012-2017 OCS Oil & Gas Leasing Program, which proposes one lease sale (OCS Oil & Gas Lease Sale 244) in Cook Inlet in June 2017. Publication of this notice does not mean the final decision has been made to hold the lease sale.

The next step in the leasing process is the publication of the Final Notice of Sale. Per BOEM's regulations, this must be done at least 30 days prior to the date of the sale.

The Proposed Notice of Sale follows the Dec. 22, 2016, publication of an Environmental Impact Statement relating to the proposed sale. The EIS analyzed the important environmental resources and uses (e.g., sea otter and beluga whale populations; subsistence activities; commercial fishing of pacific salmon and halibut; and more) that currently exist within the Cook Inlet Planning Area and identified robust mitigation measures to be considered in leasing the area. Mitigation measures identified in the proposed notice would protect sea otter, beluga whale and commercial fisheries.

For more information, including a map of the proposed lease sale area and a timeline of the leasing process, see: www.boem.gov/ak244

The Bureau of Ocean Energy Management (BOEM) promotes energy independence, environmental protection and economic development through responsible, science-based management of Outer Continental Shelf conventional and renewable energy resources.

– BOEM –

To: Hommel, Scott (Interior)[Scott.Hommel@ios.doi.gov]
Cc: Hommel, Scott (Interior) [REDACTED] (b)(6)
From: Chuck Cunningham
Sent: 2017-03-16T16:43:55-04:00
Importance: High
Subject: SAFE Criticizes Move to Block Offshore Drilling
Received: 2017-03-16T16:44:03-04:00

Scott:

Hope that all is well with you.

Rumor is that President Trump will be signing executive orders next week to reverse this Obama action (SAFE news release below criticizing it). What can we at SAFE do to help show our support for these actions other than a news release of praise? Attend the signing event?

<http://secureenergy.org/press/safe-ceo-condemns-obama-administration-move-block-offshore-drilling>

Chuck

Charles H. Cunningham
ChuckC@visi.net
Senior Vice President for Government Relations and External Affairs
[Securing America's Future Energy \(SAFE\)](#)
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(202) 461-2379 (FAX)

To: Lillie, Thomas[thomas.lillie@bsee.gov]
Cc: Rees, Gareth[gareth_rees@ios.doi.gov]
From: Randall Luthi
Sent: 2017-04-03T11:30:34-04:00
Importance: Normal
Subject: Wednesday's Fly In
Received: 2017-04-03T11:30:59-04:00

Frist, my apologies, this was scheduled to go to you on Friday, but we had a change of attendees and then I didn't get it sent out. Following are the names of our Board Members that will be at Interior at 11:00 am on Wednesday, April 5th. There is also a list of expected topics.

Mark Hatfield

Vice President, Gulf of Mexico Business Unit
Chevron
Covington, Louisiana
Sector: Producing

Kevin McEvoy

Chief Executive Officer
Oceaneering International, Inc.
Houston, Texas
Sector: Equipment Manufacturers / Suppliers

Cindy Taylor

President & CEO
Oil States International
Houston, Texas
Sector: Marine Construction / Contractors

Richard Clark

President
Deep Gulf Energy
Houston, Texas
Sector: Producing

Lynne Hackedorn

Vice President, Government & Public Affairs
Cobalt International Energy, Inc.
Houston, Texas
Sector: Producing

Jamie Vazquez

Board of Directors Member
NOIA
Houston, Texas

Probable Topics:

Increased access to the OCS. Currently 94% of the OCS is off limits to oil and natural gas exploration. Are there plans to begin a new Five Year Program? Working with Congress to shorten the time frame?

Will there be an effort to reverse some or all of the 12(a) withdrawals.

Regulatory issues. Status of the Air Quality Rule, NTL on Financial Assurance, timing of upcoming deadlines under the Well Control Rule, update on the Valuation Rule, plans for the Royalty Policy Committee, regulatory agenda for the next 6 months.

Geologic and geophysical permitting. What is the status of the denied permits for the Atlantic? Status of the DPEIS for the GOM. Relationship with NMFS and discussion of why such lengthy time-frames for decisions.

DOI Leadership. Update on filling of key leadership posts.

Randall Luthi
President, NOIA



To: Domenech, Douglas W. (Interior)[Douglas_Domenech@ios.doi.gov]; Hommel, Scott (Interior)[Scott_Hommel@ios.doi.gov]; Katharine Sinclair MacGregor (Katharine_MacGregor@ios.doi.gov)[Katharine_MacGregor@ios.doi.gov]; Magallanes, Downey (Interior)[Downey_Magallanes@ios.doi.gov]
From: Chuck Cunningham
Sent: 2017-04-10T11:07:54-04:00
Importance: High
Subject: Trump moves to open Atlantic coast to oil drilling for first time in more than 30 years
Received: 2017-04-10T11:08:04-04:00

Hope all is well with you.

How can SAFE help and actively support this effort (https://www.washingtonpost.com/news/energy-environment/wp/2017/04/07/trump-prepares-to-overturn-obamas-limits-on-offshore-oil-drilling/?utm_term=.812a889a0b89)?

See our news release on December 20: [SAFE Criticizes Move to Block Offshore Drilling](#)

Chuck

Charles H. Cunningham
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To: Boulton, Caroline[caroline_boulton@ios.doi.gov]
From: ryanzinke
Sent: 2017-04-25T06:36:06-04:00
Importance: Normal
Subject: RE: Schedule: 4.25
Received: 2017-04-25T06:36:16-04:00

Don't I have a dinner tonight? teddy roosevelt conservation?

Sent from my Verizon Wireless 4G LTE smartphone

----- Original message -----

From: "Boulton, Caroline" <caroline_boulton@ios.doi.gov>
Date: 24/04/2017 19:11 (GMT-05:00)
To: ryanzinke <[REDACTED] (b)(6)>
Cc: cdr06@ios.doi.gov
Subject: Schedule: 4.25

April 25

7:35-7:55 Drive to National Press Club

8:00-8:45 REMARKS: Outdoor Industry Alliance Event

Location: National Press Club

Note: Laura and Heather will meet you there

8:45-9:00 Drive to DOI

9:00-10:00 Senior Staff Meeting

Location: Office

10:00-11:00 Briefing on Offshore EO and Mineral Leasing

Location: Office

11:00-11:30 Little Shell Tribe Meeting

Location: Office

11:30-12:30 Lunch

Location: Office

12:30-1:00 Review of Upcoming Secretarial Orders

Location: Office

1:00-1:30 Western Energy Alliance

Location: Office

1:30-2:00 Daily Meeting with Chief of Staff

Location: Office

2:00-3:00 Personnel Interview Review

Location: Office

3:00-3:30 University of Oregon President Meeting

Location: Office

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Caroline Boulton

Department of the Interior

Scheduling & Advance

Caroline_Boulton@ios.doi.gov | Scheduling@ios.doi.gov

To: scott_hommel@ios.doi.gov[scott_hommel@ios.doi.gov]
From: White House Press Office
Sent: 2017-04-28T13:34:34-04:00
Importance: Normal
Subject: Presidential Executive Order Implementing an America-First Offshore Energy Strategy
Received: 2017-04-28T14:00:22-04:00

THE WHITE HOUSE
Office of the Press Secretary

FOR IMMEDIATE RELEASE
April 28, 2017

EXECUTIVE ORDER

- - - - -

IMPLEMENTING AN AMERICA-FIRST OFFSHORE ENERGY STRATEGY

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the Outer Continental Shelf Lands Act, 43 U.S.C. 1331 *et seq.*, and in order to maintain global leadership in energy innovation, exploration, and production, it is hereby ordered as follows:

Section 1. Findings. America must put the energy needs of American families and businesses first and continue implementing a plan that ensures energy security and economic vitality for decades to come. The energy and minerals produced from lands and waters under Federal management are important to a vibrant economy and to our national security. Increased domestic energy production on Federal lands and waters strengthens the Nation's security and reduces reliance on imported energy. Moreover, low energy prices, driven by an increased American energy supply, will benefit American families and help reinvigorate American manufacturing and job growth. Finally, because the Department of Defense is one of the largest consumers of energy in the United States, domestic energy production also improves our Nation's military readiness.

Sec. 2. Policy. It shall be the policy of the United States to encourage energy exploration and production, including on the Outer Continental Shelf, in order to maintain the Nation's position as a global energy leader and foster energy security and resilience for the benefit of the American people, while ensuring that any such activity is safe and environmentally responsible.

Sec. 3. Implementing an America-First Offshore Energy Strategy. To carry out the policy set forth in section 2 of this order, the Secretary of the Interior shall:

- (a) as appropriate and consistent with applicable law, including the

procedures set forth in section 1344 of title 43, United States Code, in consultation with the Secretary of Defense, give full consideration to revising the schedule of proposed oil and gas lease sales, as described in that section, so that it includes, but is not limited to, annual lease sales, to the maximum extent permitted by law, in each of the following Outer Continental Shelf Planning Areas, as designated by the Bureau of Ocean Energy Management (BOEM) (Planning Areas): Western Gulf of Mexico, Central Gulf of Mexico, Chukchi Sea, Beaufort Sea, Cook Inlet, Mid-Atlantic, and South Atlantic;

(b) ensure that any revisions made pursuant to subsection (a) of this section do not hinder or affect ongoing lease sales currently scheduled as part of the 2017-2022 Outer Continental Shelf Oil and Gas Leasing Proposed Final Program, as published on November 18, 2016; and

(c) develop and implement, in coordination with the Secretary of Commerce and to the maximum extent permitted by law, a streamlined permitting approach for privately funded seismic data research and collection aimed at expeditiously determining the offshore energy resource potential of the United States within the Planning Areas.

Sec. 4. Responsible Planning for Future Offshore Energy Potential.

(a) The Secretary of Commerce shall, unless expressly required otherwise, refrain from designating or expanding any National Marine Sanctuary under the National Marine Sanctuaries Act, 16 U.S.C. 1431 *et seq.*, unless the sanctuary designation or expansion proposal includes a timely, full accounting from the Department of the Interior of any energy or mineral resource potential within the designated area -- including offshore energy from wind, oil, natural gas, methane hydrates, and any other sources that the Secretary of Commerce deems appropriate -- and the potential impact the proposed designation or expansion will have on the development of those resources. The Secretary of the Interior shall provide any such accounting within 60 days of receiving a notification of intent to propose any such National Marine Sanctuary designation or expansion from the Secretary of Commerce.

(b) The Secretary of Commerce, in consultation with the Secretary of Defense, the Secretary of the Interior, and the Secretary of Homeland Security, shall conduct a review of all designations and expansions of National Marine Sanctuaries, and of all designations and expansions of Marine National Monuments under the Antiquities Act of 1906, recently recodified at sections 320301 to 320303 of title 54, United States Code, designated or expanded within the 10-year period prior to the date of this order.

(i) The review under this subsection shall include:

(A) an analysis of the acreage affected and an analysis of the budgetary impacts of the costs of managing each National Marine Sanctuary or Marine National Monument designation or expansion;

(B) an analysis of the adequacy of any required Federal,

State, and tribal consultations conducted before the designations or expansions; and

(C) the opportunity costs associated with potential energy and mineral exploration and production from the Outer Continental Shelf, in addition to any impacts on production in the adjacent region.

(ii) Within 180 days of the date of this order, the Secretary of Commerce, in consultation with the Secretary of Defense and the Secretary of the Interior, shall report the results of the review under this subsection to the Director of the Office of Management and Budget, the Chairman of the Council on Environmental Quality, and the Assistant to the President for Economic Policy.

(c) To further streamline existing regulatory authorities, Executive Order 13754 of December 9, 2016 (Northern Bering Sea Climate Resilience), is hereby revoked.

Sec. 5. Modification of the Withdrawal of Areas of the Outer Continental Shelf from Leasing Disposition. The body text in each of the memoranda of withdrawal from disposition by leasing of the United States Outer Continental Shelf issued on December 20, 2016, January 27, 2015, and July 14, 2008, is modified to read, in its entirety, as follows:

"Under the authority vested in me as President of the United States, including section 12(a) of the Outer Continental Shelf Lands Act, 43 U.S.C. 1341(a), I hereby withdraw from disposition by leasing, for a time period without specific expiration, those areas of the Outer Continental Shelf designated as of July 14, 2008, as Marine Sanctuaries under the Marine Protection, Research, and Sanctuaries Act of 1972, 16 U.S.C. 1431-1434, 33 U.S.C. 1401 *et seq.*"

Nothing in the withdrawal under this section affects any rights under existing leases in the affected areas.

Sec. 6. Reconsideration of Notice to Lessees and Financial Assurance Regulatory Review. The Secretary of the Interior shall direct the Director of BOEM to take all necessary steps consistent with law to review BOEM's Notice to Lessees No. 2016-N01 of September 12, 2016 (Notice to Lessees and Operators of Federal Oil and Gas, and Sulfur Leases, and Holders of Pipeline Right-of-Way and Right-of-Use and Easement Grants in the Outer Continental Shelf), and determine whether modifications are necessary, and if so, to what extent, to ensure operator compliance with lease terms while minimizing unnecessary regulatory burdens. The Secretary of the Interior shall also review BOEM's financial assurance regulatory policy to determine the extent to which additional regulation is necessary.

Sec. 7. Reconsideration of Well Control Rule. The Secretary of the Interior shall review the Final Rule of the Bureau of Safety and Environmental Enforcement (BSEE) entitled "Oil and Gas and Sulfur Operations in the Outer Continental Shelf-Blowout Preventer Systems and Well Control," 81 *Fed. Reg.*

25888 (April 29, 2016), for consistency with the policy set forth in section 2 of this order, and shall publish for notice and comment a proposed rule revising that rule, if appropriate and as consistent with law. The Secretary of the Interior shall also take all appropriate action to lawfully revise any related rules and guidance for consistency with the policy set forth in section 2 of this order. Additionally, the Secretary of the Interior shall review BSEE's regulatory regime for offshore operators to determine the extent to which additional regulation is necessary.

Sec. 8. Reconsideration of Proposed Offshore Air Rule. The Secretary of the Interior shall take all steps necessary to review BOEM's Proposed Rule entitled "Air Quality Control, Reporting, and Compliance," 81 *Fed. Reg.* 19718 (April 5, 2016), along with any related rules and guidance, and, if appropriate, shall, as soon as practicable and consistent with law, consider whether the proposed rule, and any related rules and guidance, should be revised or withdrawn.

Sec. 9. Expedited Consideration of Incidental Harassment Authorizations, Incidental-Take, and Seismic Survey Permits. The Secretary of the Interior and the Secretary of Commerce shall, to the maximum extent permitted by law, expedite all stages of consideration of Incidental Take Authorization requests, including Incidental Harassment Authorizations and Letters of Authorization, and Seismic Survey permit applications under the Outer Continental Shelf Lands Act, 43 U.S.C. 1331 *et seq.*, and the Marine Mammal Protection Act, 16 U.S.C. 1361 *et seq.*

Sec. 10. Review of National Oceanic and Atmospheric Administration (NOAA) Technical Memorandum NMFS-OPR-55. The Secretary of Commerce shall review NOAA's Technical Memorandum NMFS-OPR-55 of July 2016 (Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing) for consistency with the policy set forth in section 2 of this order and, after consultation with the appropriate Federal agencies, take all steps permitted by law to rescind or revise that guidance, if appropriate.

Sec. 11. Review of Offshore Arctic Drilling Rule. The Secretary of the Interior shall immediately take all steps necessary to review the Final Rule entitled "Oil and Gas and Sulfur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf," 81 *Fed. Reg.* 46478 (July 15, 2016), and, if appropriate, shall, as soon as practicable and consistent with law, publish for notice and comment a proposed rule suspending, revising, or rescinding this rule.

Sec. 12. Definition. As used in this order, "Outer Continental Shelf Planning Areas, as designated by the Bureau of Ocean Energy Management" means those areas delineated in the diagrams on pages S-5 and S-8 of the 2017-2022 Outer Continental Shelf Oil and Gas Leasing Draft Proposed Program, as published by the BOEM in January 2015, with the exception of any buffer zones included in such planning documents.

Sec. 13. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

DONALD J. TRUMP

THE WHITE HOUSE,
April 28, 2017.

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The White House · 1600 Pennsylvania Avenue, NW · Washington DC 20500 · 202-456-1111

To: scott_hommel@ios.doi.gov[scott_hommel@ios.doi.gov]
From: White House Press Office
Sent: 2017-04-28T13:35:40-04:00
Importance: Normal
Subject: Remarks by President Trump at Signing of Executive Order on an America-First Offshore Energy Strategy
Received: 2017-04-28T14:02:08-04:00

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

April 28, 2017

REMARKS BY PRESIDENT TRUMP
AT SIGNING OF EXECUTIVE ORDER ON
AN AMERICA-FIRST OFFSHORE ENERGY STRATEGY

Roosevelt Room

11:04 A.M. EDT

THE PRESIDENT: Thank you, Mike Pence -- a really wonderful guy, and my great friend, and a truly great Vice President. He will go down as a truly great Vice President.

Many thanks to Secretaries Wilbur Ross and Ryan Zinke. Very proud of the job they're doing.

We're also pleased to welcome many members of Congress and energy industry leaders to the White House. And I want to get them immediately back over there because I know they're going to be voting on lots of different things, right? So we can't spend too much time talking about drilling in the Arctic, right? But we're opening it up.

This is a great day for American workers and families, and today we're unleashing American energy and clearing the way for thousands and thousands of high-paying American energy jobs. Our country is blessed with incredible natural resources, including abundant offshore oil and natural gas reserves. But the federal government has kept 94 percent of these offshore areas closed for exploration and production. And when they say closed, they mean closed.

This deprives our country of potentially thousands and thousands of jobs and billions of dollars in wealth. I pledged to take action, and today I am keeping that promise.

This executive order starts the process of opening offshore areas to job-creating energy exploration. It reverses the previous administration's Arctic leasing ban. So hear that: It reverses the previous administration's Arctic leasing ban, and directs Secretary Zinke to allow responsible development of offshore areas that will bring revenue to our Treasury and jobs to our workers. (Applause.) In addition, Secretary Zinke will be reconsidering burdensome regulations that slow job creation.

Finally, this order will enable better scientific study of our offshore resources and research that has blocked everything from happening for far too long. You notice it doesn't get blocked for other nations. It only gets blocked for our nation.

Renewed offshore energy production will reduce the cost of energy, create countless good jobs, and make America more secure and far more energy independent. This action is another historic step toward future development and future -- with a future -- a real future. And I have to say that's a real future with greater prosperity and security for all Americans, which is what we want.

So I'm very proud of the people standing behind me. I'm far less proud of the people standing in front of me. (Laughter.) The media. But I have to tell you that this is a very important day, and I want to congratulate Wilbur and Ryan and all of the people that have worked so hard to get this put together so quickly. And it's going to lead to a lot of great wealth for our country and a lot of great jobs for our country.

So God bless America. Thank you very much. (Applause.)

(The executive order is signed.)

Q Mr. President, what's made this job harder than you thought?

THE PRESIDENT: We're moving awfully well. We're getting a lot of things done. I don't think there's ever been anything like this. It's a false standard, 100 days, but I have to tell you, I don't think anybody has done what we did over the 100 days. So we're very happy. (Applause.)

END

11:09 A.M. EDT

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To: scott_hommel@ios.doi.gov[scott_hommel@ios.doi.gov]
From: White House Press Office
Sent: 2017-04-28T16:04:54-04:00
Importance: Normal
Subject: President Donald J. Trump to Open Up America's Energy Potential
Received: 2017-04-28T16:08:46-04:00

THE WHITE HOUSE
Office of the Press Secretary

FOR IMMEDIATE RELEASE
April 28, 2017

President Donald J. Trump to Open Up America's Energy Potential

"I am going to lift the restrictions on American energy, and allow this wealth to pour into our communities." – Donald J. Trump

AMERICA'S ENERGY RESOURCES ARE LOCKED AWAY: Under the previous administrations, America's offshore resources were blocked from responsible development.

- Ninety-four percent of the U.S. Outer Continental Shelf's (OCS's) 1.7 billion acres are either off-limits to or not considered for oil and gas exploration and development under the current (2017-2022) leasing program.
 - Days before leaving office on January 17, 2017, the Obama Administration approved the latest schedule for oil and gas lease sales that would last for five years until 2022.
 - There are hundreds of millions of acres of federal waters in the Arctic Ocean, Atlantic Ocean, and Gulf of Mexico.
- The OCS is expected to contain 90 billion barrels of undiscovered technically recoverable oil and 327 trillion cubic feet of undiscovered technically recoverable natural gas.
- In FY 2016, Federal revenues from the OCS were \$2.8 billion; the actual sales value of the oil and gas resources was \$26 billion and generated \$55 billion in total spending in the economy. These expenditures supported approximately 315,000 American jobs.
- Alaska has seen a number of nearby OCS areas closed off to development and now has the second highest unemployment in the country, as its resource sectors, particularly oil and gas, have lost thousands of jobs.
 - At least one energy company has announced it would withdraw from all but one of its OCS leases in Alaska because of uncertain federal regulations.
- Revenue to the Federal Government from leasing the OCS has fallen by over 80 percent, from \$18 billion in 2008 to \$2.8 billion in 2016. On average, OCS energy development generates \$10-12 billion annually.

FREEING AMERICA'S ENERGY POTENTIAL: President Donald J. Trump is removing restrictions on the OCS that locked away America's energy potential.

- President Trump signed an Executive Order today to direct the Secretary of Interior and Secretary of Commerce to take action on OCS restrictions.
- The Secretary of the Interior will review areas closed off by the current five-year plan for sale of oil and gas leases in the OCS, without disrupting scheduled lease sales. These planning areas include:
 - Western and Central Gulf of Mexico
 - Chukchi Sea
 - Beaufort Sea
 - Cook Inlet
 - Mid and South Atlantic
- The Secretary of the Interior will review four rules and regulations put in place last year that could reduce exploration and development in the OCS. These include:
 - Notice to Lessees and Operators of Federal Oil and Gas, and Sulfur Leases, and Holders of Pipeline Right-of-Way and Right-of-Use and Easement Grants in the Outer Continental Shelf
 - Oil and Gas and Sulfur Operations in the Outer Continental Shelf-Blowout Preventer Systems and Well Control
 - Air Quality Control, Reporting, and Compliance
 - Oil and Gas and Sulfur Operations on the Outer Continental Shelf – Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf
- The Secretary of Commerce is directed to refrain from designating or expanding National Marine Sanctuaries unless the proposal includes “a timely, full accounting from the Department of the Interior of any energy or mineral resource potential” – including offshore energy from wind, oil, natural gas, and other sources – within the designated area and the potential impact the proposed designation or expansion will have on the development of those resources.
- The Secretary of Commerce and the Secretary of the Interior will work together to develop a streamlined permitting approach for privately funded seismic data research and collection to expeditiously determine the offshore resource potential of the United States.

FOLLOWING THROUGH ON HIS PROMISE TO THE AMERICAN PEOPLE: President Trump is following through on the energy development policies he promised to the American people.

- Then-Candidate Trump:
 - “We need an America-First energy plan. This means opening Federal lands for oil and gas production; opening offshore areas; and revoking policies that are imposing unnecessary restrictions on innovative new exploration technologies.”

###

Unsubscribe

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To: Vincent DeVito[vincent_devito@ios.doi.gov]
From: Vincent DeVito
Sent: 2017-05-02T22:45:22-04:00
Importance: Normal
Subject: Fwd: Zinke Orders Revamp of 2017-2022 OCS Oil, NatGas Leasing, Appoints Energy Counselor | 2017-05-02 | Natural Gas Intelligence
Received: 2017-05-02T22:45:30-04:00

Begin forwarded message:

From: devitovincent <[REDACTED] (b)(6)>
Date: May 2, 2017 at 10:43:58 PM EDT
To: [REDACTED] (b)(6)
Subject: **Zinke Orders Revamp of 2017-2022 OCS Oil, NatGas Leasing, Appoints Energy Counselor | 2017-05-02 | Natural Gas Intelligence**

<http://www.naturalgasintel.com/articles/110316-zinke-orders-revamp-of-2017-2022-ocs-oil-natgas-leasing-appoints-energy-counselor>

To: katharine_macgregor@ios.doi.gov[katharine_macgregor@ios.doi.gov];
vincent_devito@ios.doi.gov[vincent_devito@ios.doi.gov];
walter.cruickshank@boem.gov[walter.cruickshank@boem.gov];
michael.celata@boem.gov[michael.celata@boem.gov]; holli.ensz@boem.gov[holli.ensz@boem.gov];
peter.meffert@boem.gov[peter.meffert@boem.gov]; helen.rucker@boem.gov[helen.rucker@boem.gov]
From: Greg Southworth
Sent: 2017-05-15T17:26:29-04:00
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The attached comments were submitted this afternoon (May 15, 2017) to the above-referenced docket on www.regulations.gov. The attached comments were developed on behalf of the American Petroleum Institute (API), the National Ocean Industries Association (NOIA), the Louisiana Mid-Continent Oil and Gas Association (LMOGA), the Petroleum Equipment and Services Association (PESA), and the Offshore Operators Committee (OOC).

The attached comments are being provided directly to you for your information, review and use.

Thank you.

Sincerely,

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OFFSHORE OPERATORS COMMITTEE

May 15, 2017

Submitted via www.regulations.gov

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RE: ***Joint Trade Association Comments
Gulf of Mexico Outer Continental Shelf Lease Sale Draft Supplemental Environmental
Impact Statement 2018 MMAA10400
Docket ID: BOEM-2017-0001***

The American Petroleum Institute (API), the National Ocean Industries Association (NOIA), the Louisiana Mid-Continent Oil and Gas Association (LMOGA), the Petroleum Equipment and Services Association (PESA), and the Offshore Operators Committee (OOC) – hereinafter referred to as “the Joint Trades” - respectfully submit the attached comments on the Bureau of Ocean Energy Management’s (BOEM) Gulf of Mexico Outer Continental Shelf Lease Sale Draft Supplemental Environmental Impact Statement 2018 MMAA10400, Docket ID: BOEM-2017-0001 – hereinafter referred to as “the Draft SEIS.”

The Joint Trades represent energy companies who conduct the vast majority of the Outer Continental Shelf (OCS) oil and natural gas exploration and production activities in the United States. Additionally, many of our associations’ members are involved in drilling, equipment manufacturing, construction, and support services for the offshore oil and natural gas industry. The comments submitted in this letter are without prejudice to any of our member companies' right to have or express different or opposing views.

Our members recognize that offshore operations must be conducted safely and in a manner that protects the environment. We also recognize that policy decisions that impact the offshore oil and gas industry must be based on sound science, transparency, consultation and adequate review. The Draft SEIS raises serious concerns regarding these important criteria. Specifically, BOEM has elected to include new, substantive, yet still incomplete, information from the ongoing Gulf of Mexico (GOM) Air Quality Modeling study in the Draft SEIS. Even more concerning, BOEM is choosing to use preliminary, incomplete results from this study to make National Environmental Policy Act (NEPA) environmental impact determinations. Use of an incomplete, ongoing work product as a basis for drawing conclusions on possible environmental impacts is neither prudent nor transparent, and does not present an accurate depiction of offshore operations to the public and interested stakeholders. The Joint Trades believe it is imperative that BOEM not utilize the preliminary results from the ongoing study as a basis for impact determinations. We recommend that the preliminary results only be used for analysis and review, but conclusions regarding any potential impacts to onshore air quality should not be based on an unfinished study.

These concerns are not new. In an earlier letter dated January 18, 2017, API objected to BOEM's conclusion in the Final Programmatic Environmental Impact Statement for the 2017-2022 Five-year Program (5-year Program FPEIS) that offshore oil and natural gas activity will lead to moderate onshore air quality impacts based on an interim deliverable from an ongoing BOEM study. To our knowledge, the interim deliverable was not publicly released for review. API raised similar concerns again in a letter to BOEM on April 10, 2017 regarding the inclusion of the preliminary air modeling results in the Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022; Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261; Final Multisale Environmental Impact Statement (Multisale EIS).

Also, the Joint Trades submitted comments on June 20, 2016 on BOEM's proposed Air Quality, Reporting and Compliance Rule (Docket ID: BOEM-2013-0081) recommending that agency decisions should not proceed until there is a demonstration that OCS sources significantly affect onshore air quality and jeopardize compliance with the NAAQS.

It appears that BOEM continues to discount industry's concerns regarding use of preliminary data from the incomplete GOM Air Quality Modeling study. We cannot emphasize this point enough – the study must be completed and made available for public comment and input before the results and conclusions are used for policy-making, agency decisions, or future rulemaking.

We recommend that BOEM change the process for review of the GOM Air Modeling study moving forward to one that allows for substantial input from a multi-stakeholder group. By establishing such a group, model inputs, assumptions and results could be improved and the overall process would become more transparent. Such an approach would likely be more cost effective for BOEM as well, since re-running year-long photochemical models with updated assumptions can be time consuming and expensive.

A. Specific comments on the air quality information included with the Draft SEIS

1. Information from the GOM Air Quality Modeling Study that is Critical to Decision Making and Public Review is Not Included in the Draft SEIS

The air quality information included in the Draft SEIS is incomplete. BOEM has not provided sufficient documentation on the assumptions that were made related to the models, the assumptions and basis for the data used as model inputs, and what type of adjustments were made as the result of sensitivity analysis. Some examples of critical information that has not been included in the Draft SEIS are:

- Model input data from the 2011 GOM Emissions Inventory (GOADS), including how the emissions estimates in the 2011 emissions inventory were adjusted prior to use in the modeling study.
- The methodology for developing the default emission factors for Shallow and Deepwater platforms used to project future emissions.
- Information on how emission factors for ammonia and lead were developed; this information is important since the 2011 GOM Emissions Inventory did not contain emissions estimates for ammonia and lead.

In short, the public has received an unfinished work-in-progress document that does not include relevant information required for the public and interested stakeholders to make well-informed, constructive comments.

Since not all supporting information has been made available and the GOM air study is still underway, the public has no means to determine whether the information presented in the Draft SEIS represents “the best available data” for NEPA decision-making. Of greater concern is the fact that BOEM has chosen to utilize an unfinished, work-in-progress study as the one of the bases for important decisions regarding further development of resources in the GOM.

2. Information Specifically Referenced in the Draft SEIS has been Omitted, and the Draft SEIS Contains Contradictory Information

In numerous instances, information is referenced that has been omitted from the Draft SEIS, or the Draft SEIS makes contradictory conclusions. Some examples include:

- *Section 4.1.2.1, Drilling and Production Associated Vessel Support, page 4-29*

BOEM references Section 3.1.4.4 for a discussion of support vessels for OCS oil and gas related activities; however, there no such section in the Draft SEIS document. In addition, other sub-sections in Section 3.1 “Routine Activities” do not provide a discussion of support vessels.

The conclusion paragraph stating that the impacts of support vessels are minor offers no substantiated basis for this conclusion; it only references impacts “as shown in the model” – a model, as discussed above, that has not been completed and made available for comment. In addition, it is unclear how emissions from support vessels were assessed in the model. As referenced in BOEM guidance, operators are required to assess support vessel emissions when the vessel is within 25 miles of a facility¹. For consistency and future comparison of the model results to actual OCS emissions, we recommend that BOEM include similar assumptions in the modeling.

- *Section 4.1.2.2, Accidental Events, page 4-31*

The Draft SEIS states that air emissions from accidental events are discussed in Section 3.2.3. However, Section 3.2.3 discusses accidental events response, but offers no discussion of air emissions from accidental events.

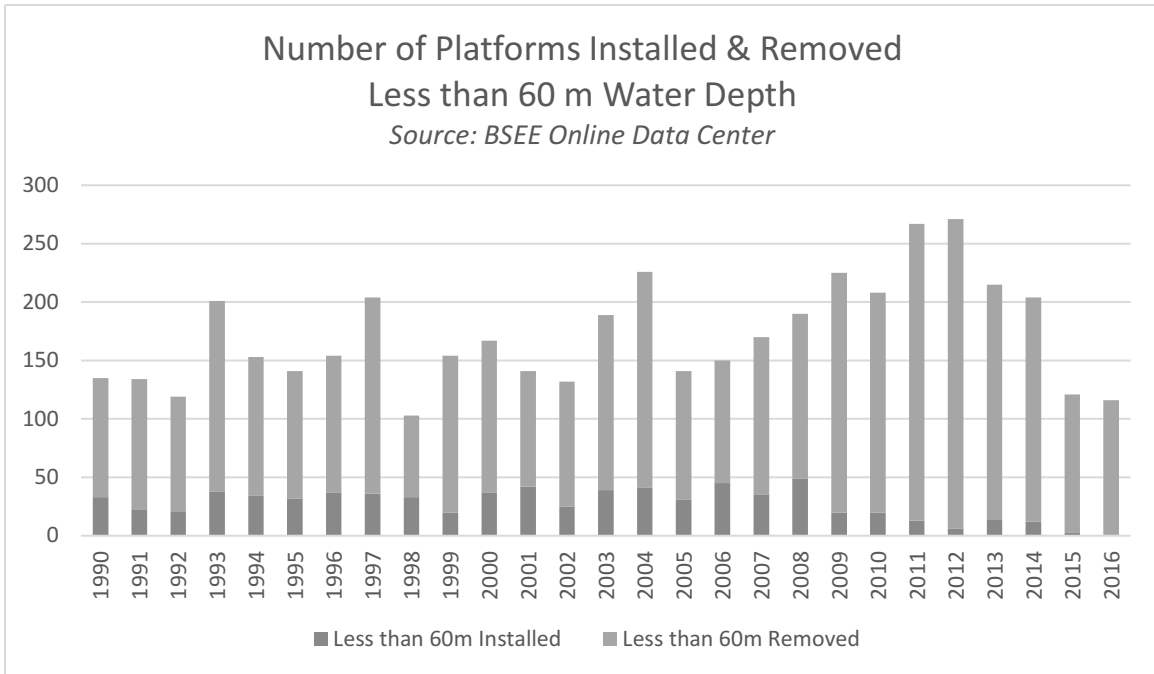
3. Assumptions in the Draft SEIS are Unrealistically Conservative and Do Not Reflect Actual GOM Conditions

Based on the information presented in the Draft SEIS, the air quality model appears to be an unrealistic worst case scenario with regards to overall emissions from OCS oil and gas platform and support vessel emissions. However, had additional information on the specifics of the model assumptions and input data

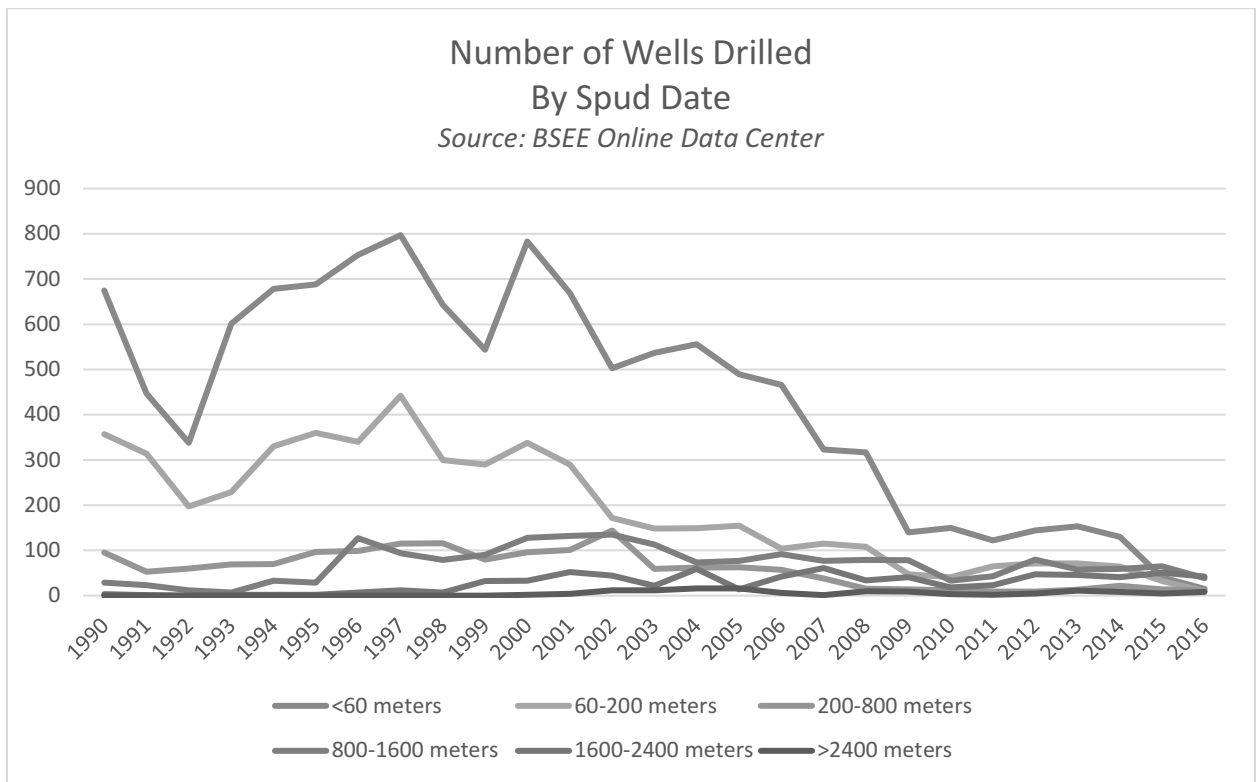
¹ <https://www.boem.gov/Environmental-Stewardship/Environmental-Studies/Gulf-of-Mexico-Region/Air-Quality/Air-Quality-Submission-Tips.aspx>

been provided, perhaps a different conclusion could be reached. Some concerns that we have identified in the information presented in the Draft SEIS include:

- The existing OCS oil and gas platform and support vessel emissions were developed from the 2011 Gulfwide inventory based on activity data from GOADS. The existing GOM oil and gas emissions were held constant for future year projects at the 2011 level, even though these emissions would likely decrease over time as existing assets reach the end of their productive life and are removed from service. For these future year projections, the new emissions from new oil and gas platform and support vessels from the upcoming lease sale were taken as the maximum emissions from any future year in the lease period. The total emissions from these new platforms and support vessels were estimated to be the highest in 2033 for NO_x, CO, PM₁₀, PM_{2.5}, lead, and ammonia and in 2036 for SO₂ and VOC emissions. By 2033 and 2036, the emissions from the existing GOM oil & gas related sources would likely be much lower due to asset retirement, and emissions from unrelated onshore sources would likely be less as well due to control technology installation, calling into question specific changes in design values at regulatory monitors that are discussed in multiple sections of the Draft SEIS.
- There appears to be quite a bit of overprediction throughout the modeling process, such as the number of platforms forecasted for future years in the GOM, the direction of onshore flow winds used in the WRF model, and the development of worst case emissions based on a combination of two different forecasted emission years (2033 and 2036), yet the uncertainty due to these overpredictions does not seem to be addressed in the impact section. If BOEM is going to issue qualitative conclusions, then the uncertainty due to model overpredictions must also be addressed. The Draft SEIS makes statements about OCS sources contributing to exceedances, but those contributions might not be impacting NAAQS compliance status considering the overpredictions. The Draft SEIS does not discuss the uncertainty caveats in the summaries/conclusions.
- Figure C-15 in the Draft SEIS appears to overpredict the future number of platforms in shallower water depths, particularly platforms in less than 60 m of water. A review of Figure C-15 reveals that BOEM's future predictions show 137 new platforms (60% of the future total) in less than 60 m water depth. However, Figure C-15 does not account for historical trends nor ongoing platform removals. Using data from BSEE's Online Data Center, the Joint Trades have determined that for each year from 1990 to 2016, platform removals exceed platform installations in water depths less than 60 m (see chart below). Therefore, GOM activity in areas of less than 60 m water are centered on structure removal not installation. Any future projections must account for this type of historical trend.



Similarly, the number of wells drilled annually since 1990 has dramatically declined in shallower water depths (less than 200 meters). As the chart below demonstrates, activity as measured by the number of wells drilled is shifting from shallower water depths to deeper waters. Any future projections on platform locations used in the GOM Air Quality Modeling study and Draft SEIS should account for these trends to realistically represent future GOM projections.



- The underlying assumption used in the CAMx future year projections is that any currently unleased blocks in GOM are equally likely to be developed as part of the upcoming lease sale. This assumption ends up placing a substantial number of exploration and delineation wells (Figure 3-3 on page 3-16) and development wells (Figure 3-4 on page 3-18) in the areas closest to shore, where emissions are most likely to have an impact on on-shore receptors. Given that the placement of support vessel emissions is a function of the location of placement in the model, this decision compounds the over-estimation of near-shore emissions and further overstates the on-shore impact. It also contradicts the general trends in development in the GOM region, which is increasingly moving to deepwater leases, which due to their distance from shore would likely have a lesser impact on onshore air quality. For example, BOEM data on bids received for lease sales in 2015 for the Western and Central GOM were 94% and 70%, respectively at a depth of 400 m (~1320 ft) greater².
- In Appendix B which discusses the WRF modeling, every wind rose plot presented shows the model overpredicted onshore flow at every site in 2012. This impacts any results that show an onshore impact from offshore sources. It doesn't appear that the overprediction was considered in the uncertainties for the results. Data from 2012 is particularly important since it was the meteorology used in the CAMx model.
- It appears that a limited number of sites were selected for the wind rose plot evaluation used in the WRF model. For example, no wind data were selected for Galveston, TX. Since it seems to be important in the future year design value comparison, and since Galveston is one of the few non-attainment areas along the Gulf Coast, it would be beneficial to have the meteorological evaluation for Galveston in the WRF model.
- The upper air qualitative evaluation presented in Appendix B is very limited and as such raises several questions. Evaluation results are presented for just two sites and for just one sounding at each site. Using such limited data to represent the upper air modeling performance for the entire year is incomplete and inadequate. How did the rest of the year look for these two sites? Why were only two sites evaluated when there are nearly ten sounding sites along the Gulf Coast? What do the soundings look like at times of high ozone and/or PM? We recommend that further evaluation be completed and presented for multiple sounding sites and during times of elevated ozone and/or PM.
- Actual monitoring data show that the attainment/nonattainment areas along the Gulf Coast tend to have their cleanest days when there is a consistent onshore flow. The times where there are elevated levels of ozone with onshore flow, for example, is when there is recirculation of onshore emissions and not an impact of offshore emissions. The modeling does not appear to match actual monitoring conditions. The Joint Trades offer the following technical references as additional information regarding onshore ozone concentrations:
 - Background ozone concentrations in southeast Texas average about 50 ppb, with higher concentrations observed when winds originate from the continental U.S., and much lower

² <https://www.boem.gov/Gulf-of-Mexico-Region-Leasing-Information/>

- concentrations observed when winds originate directly from the Gulf of Mexico (Nielsen-Gammon et al., 2005a).³
- Days that are dominated by a stationary anticyclone (the Bermuda High, for example) tend to have lower ozone, in part because this circulatory pattern brings steady southeast winds from the Gulf of Mexico (Davis et al., 1998).⁴
 - Sullivan et al (2009) performed cluster analysis on daily 72-hour HYSPLIT back trajectories for 2000 to 2007 to determine which transport patterns were associated with high ozone in the Houston-Galveston-Brazoria area. The lowest concentrations were observed for the trajectory cluster with a long fetch from the Gulf of Mexico (Sullivan et. al 2009).⁵
 - Higher ozone levels were generally associated with backward trajectories over land compared with backward trajectories over the Gulf of Mexico (Hendler, 2012).⁶
- Assumptions regarding support vessel emissions are overly conservative and do not represent actual GOM operations. It is likely that support vessel emissions associated with existing platforms would decrease as older platforms are decommissioned, and would not be constant at 2012 levels in future year predictions. If nearer shore blocks were to be developed, they would likely be serviced by some of the same support vessels as existing facilities and may not have as high of incremental emissions as a result. In addition, there are potentially future year emission reductions for support vessels that would be realized based on new requirements for emission performance for vessels (MARPOL Annex 6), specifically near port locations. Also, the support vessel data presented in the Draft SEIS appears to show that most support vessel activity is originating in Vermilion Parish, Louisiana. However, industry operational experience would lead to the conclusion that most support vessel activity is originating from lower Lafourche Parish, Louisiana. We recommend that BOEM specifically examine these assumptions in the GOM Air Quality Modeling study and the Draft SEIS to ensure support vessel activity is characterized correctly.
 - The Draft SEIS states that fugitive emissions can occur during all phases of OCS oil- and gas-related activity (Section 4.1.2, Page 4-28). However, production activities are the main source of fugitive emissions. There may be small fugitive emissions from diesel components on vessels and rigs, but production fugitive emissions are the primary source of fugitive emissions from OCS oil and gas activities. The 2011 GOADS report states, “Evaporative losses are insignificant in diesel engines due to the low volatility of diesel fuels (USEPA 2010).” Fugitive emissions are not calculated for diesel components on vessels and rigs as part of GOADS. In addition, BOEM has previously indicated that fugitive emissions may be overestimated by current emission factors. But the Draft SEIS contains no

³ Nielsen-Gammon, J.W., J. Tobin, and A. McNeel. 2005. A Conceptual Model for Eight-Hour Ozone Exceedances in Houston, Texas, Part II: Eight-Hour Ozone Exceedances in the Houston-Galveston Metropolitan Area, January 29, 2005. <http://files.harc.edu/Projects/AirQuality/Projects/H012.2004/8HRA/H12-8HRAFinalReport2.pdf>

⁴ Davis, J. M., B. K. Eder, D. Nychka, Q. Yang. 1998. Modeling the effects of meteorology on ozone in Houston using cluster analysis and generalized additive models, *Atmospheric Environment*, Volume 32, Issues 14-15, August 1998, Pages 2505-2520.

⁵ Sullivan, D. 2009. Effects of Meteorology on Pollutant Trends. Final Report to TCEQ. Grant Activities No. 582-5-86245-FY08-01. Prepared by Dave Sullivan, University of Texas at Austin Center for Energy and Environmental Resources, Prepared for Kasey Savanich, for the Texas Commission on Environmental Quality, March 16, 2009. http://www.tceq.state.tx.us/assets/public/implementation/air/am/contracts/reports/da/5820586245FY0801-20090316-ut-met_effects_on_pollutant_trends.pdf

⁶ Hendler, A 2012. Conceptual Model of Ozone Formation and Accumulation in the Beaumont—Port Arthur Area, August 31, 2012. http://www.setrpc.org/airdata/files/reports/rider8/1_ConceptualModel_083112.pdf

discussion of if or how adjustments to fugitive emissions data were made during the calculation of the platform emission factor used for projected future platforms.

4. The Process BOEM has Chosen to Publicly Release Information from the GOM Air Quality Modeling Study Does Not Provide the Best Available Information to the Public

One of the Joint Trades' primary concerns is that the Draft SEIS does not contain a complete data set that describes the GOM Air Quality Modeling study and that the study is not complete. BOEM has elected to use the NEPA process and this, as well as subsequent SEISs to publish the results of the GOM Air Quality Modeling study for public review. Using the NEPA process for this purpose is inappropriate and decreases the transparency of how the modeling study was developed and executed. The use of incomplete information presents conclusions about the impacts on air quality from offshore operations that are not accurate – ultimately, resulting in providing incorrect information to the public. In addition, by utilizing preliminary, work-in-progress information in this (and possibly future) SEIS documents, the agency is arriving at conclusions and making decisions based on information that may significantly change once the study is complete. This is not a credible definition of “best available data.”

To maximize transparency and ensure that the best available information is made available to the public, BOEM must establish a collaborative, multi-stakeholder input process to review the study inputs, methods, assumptions and results, complete the study, and make the complete study report available for public comment. Preliminary study results should not be used in NEPA decisions or future rule-making as this is inconsistent with sound science practices and could mislead the public.

5. BOEM May Analyze Air Quality Information Beyond the Agency's Authority, but Such Information Should Not Be Used to Prescribe Mitigations

BOEM's air quality authority set forth in OCSLA and the Clean Air Act is limited to onshore impacts to the NAAQS from offshore development and production. Although it may be appropriate for BOEM to consider and analyze other pollutants and activities in addition to the NAAQS when developing an EIS, only potential impacts to the NAAQS should be considered when determining future mitigations. For example, the Draft SEIS contains extensive discussion of greenhouse gases (GHGs). GHGs are not NAAQS pollutants, and any future mitigations prescribed by BOEM should not be based on potential GHG impacts. Specifically, in the Draft SEIS:

- *Section 4.1.2, Greenhouse Gases Including Downstream Gas, Page 4-26* - The entire discussion from the beginning of this section on page 4-25 centers on GHGs, pollutants that BOEM does not have authority to regulate because there is no NAAQS for these pollutants. However, on page 4-26, BOEM mentions N₂O and black carbon as a by-product of flaring. The next sentence states that “This practice is rare on the OCS”. Is BOEM referring to flaring as being rare, or the conversion of flared gas into N₂O and black carbon as being rare? This distinction is key because in the next paragraph, BOEM states that they have used the PM_{2.5} concentration to estimate the maximum amount of black carbon released because black carbon is a specific type of PM_{2.5}. BOEM justifies this assumption in the final sentence of the second paragraph stating “BOEM has regulatory authority over PM_{2.5}”.

Section II.A of the Joint Trades comments on the proposed air rule (dated June 20, 2016) discusses BOEM’s lack of authority to regulate pollutants that do not have a corresponding NAAQS, including precursors that have not been explicitly defined as such by EPA.

Although ozone modeling considers CO emissions from a facility, EPA has not defined it as a regulated precursor for ozone. We also note that BOEM should not regulate black carbon separately, to the extent it seeks to regulate precursors, as it lacks authority to regulate precursor elements absent a supporting EPA regulatory record, which is the agency with the expertise to make such a finding.

It is unclear what BOEM is seeking to accomplish with this discussion of GHGs and black carbon in the Draft SEIS. The Joint Trades recommends that the entire discussion of GHGs be removed from the Draft SEIS, especially since BOEM lacks the proper regulatory authority to impose mitigations for black carbon. Black carbon is not a NAAQS pollutant.

Similarly, BOEM’s authority over certain activities in the GOM is limited, especially as that authority relates to offshore support vessels. Like GHGs, information contained in the Draft SEIS regarding support vessels should not be used to justify future mitigations. Specifically,

- *Section 4.1.1, Emissions Inventories, Page 4-21* - BOEM states that production sources include survey vessels, pipe-laying operations, support vessels and helicopters, yet does not mention that BOEM does not have the authority to regulate air pollution emissions from vessels and helicopters. See section III.A of the Joint Trades comments on the proposed air rule (dated June 20, 2016) inserted below:

OCSLA limits BOEM’s authority over offshore facilities to “artificial islands[] and [] installations . . . permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources therefrom.”⁴⁵ MSCs, aircraft, and onshore facilities are clearly not “artificial islands . . . permanently or temporarily attached to the seabed” that are “exploring for, developing, or producing” oil and gas.⁴⁶ The Supreme Court has made clear that “the purpose of [OCSLA] was to define a body of law applicable to the seabed, the subsoil, and the fixed structures . . . on the Outer Continental Shelf.”⁴⁷ The Supreme Court has noted that Congress’ approach under OCSLA “was deliberately taken in lieu of treating the structures as vessels, to which admiralty law supplemented by the law of the jurisdiction of the vessel’s owner would apply.”⁴⁸

⁴⁵ 43 U.S.C. § 1333(a)(1).

⁴⁶ As particularly relevant here, Congress expressly excluded one type of MSC—vessels—from OCSLA’s purview. See 43 U.S.C. § 1332 (1)-(2) (“the subsoil and seabed of the [OCS] appertain to the United States and are subject to its jurisdiction and control . . . [OCSLA] shall be construed in such a manner that the character of the waters above . . . [are] high seas, and the right to navigation . . . therein shall not be affected”); *id.* § 1333(a)(1) (extending the jurisdiction of the U.S., through OCSLA, to “such installation or other device (other than a ship or vessel) [attached to the seabed] for the purpose of transporting [oil and gas] resources”) (emphasis added).

⁴⁷ *Rodrigue v. Aetna Cas. & Sur. Co.*, 395 U.S. 352, 355 (2014).

⁴⁸ *Id.* (emphasis added).

6. *Classification of Impacts in the Draft SEIS Are Overly Conservative and Are Not Aligned with the Definitions of Impacts Presented in the SEIS*

The Draft SEIS makes several conclusions that appear to be overly conservative and do not appear to meet the impact definitions described Section 4.1, page 4-15. The impact definitions shown on page 4-15 are as follows:

- **Negligible** – *No measurable impact(s).*
 - **Minor** – *Most impacts on the affected resource could be avoided with proper mitigation; if impacts occur, the affected resource would recover completely without mitigation once the impacting stressor is eliminated.*
 - **Moderate** – *Impacts on the affected resource are unavoidable. The viability of the affected resource is not threatened although some impacts may be irreversible, or the affected resource would recover completely if proper mitigation is applied or proper remedial action is taken once the impacting stressor is eliminated.*
 - **Major** – *Impacts on the affected resource are unavoidable. The viability of the affected resource may be threatened although some impacts may be irreversible, and the affected resource would not fully recover even if proper mitigation is applied or remedial action is implemented once the impacting stressor is eliminated.*
- *Section 4.1.2.1, Flaring and Venting, page 4-31* - The conclusion paragraph stating that the impacts of flaring and venting are minor offers no substantiated basis for this conclusion, and in fact, states that any such release would likely dissipate before reaching coastal areas. The justification presented supports a conclusion of “Negligible” not “Minor.”
 - *Section 4.1.2.1, Decommissioning, page 4-31* - BOEM is again drawing a conclusion that the air quality impacts from decommissioning activities, specifically from vessels which are not under BOEM’s jurisdiction for air quality purposes, are “Minor” without offering any substantiated basis for this conclusion. What is the justification for labeling this activity as “Minor” instead of “Negligible” in this section, as well as in Table 4-1?
 - *Section 4.1.2.3.1, Impacts Assessment, PM₁₀, page 4-42* – The Draft SEIS states, “The impacts to air quality from PM₁₀ are **minor** because, while there are concentrations increases in water farther offshore, no overall standards were exceeded.” The conclusion that no overall standards were exceeded should justify an impact classification of “Negligible.”
 - *Section 4.1.2.3.1, Impacts Assessment, Nitrogen Dioxide (NO₂), page 4-42* – The Draft SEIS states, “The impacts to air quality from 1-hour NO₂ and annual NO₂ are **minor** because overall, concentrations decrease between the base and future year scenarios at most locations.” A **decrease** in projected

emissions appears to indicate that air quality may be improving in projected future years. Therefore, the impact conclusion must be “Negligible.”

- *Section 4.1.2.3.1, Impacts Assessment, Sulfur Dioxide (SO₂), page 4-43* – The Draft SEIS states, “The impacts to air quality from 1-hour SO₂ and 3-hour SO₂ are **minor** because overall, concentrations decrease between the base and future year scenarios at most locations as sources retire or apply control equipment.” A **decrease** in projected onshore concentrations appears to indicate that air quality may be improving in projected future years. Therefore, the impact conclusion must be “Negligible.”
- *Section 4.1.2.3.1, Impacts Assessment, Carbon Monoxide (CO), page 4-43* – The Draft SEIS states, “The impacts to air quality from 1-hour CO and 8-hour CO are **minor** because overall, concentrations decrease between the base and future year scenarios at all locations.” A **decrease** in projected onshore concentrations appears to indicate that air quality may be improving in projected future years. Therefore, the impact conclusion must be “Negligible.”
- *Characterization in Table 4-1 does not match text section discussions for Accidental Events (Emergency Flaring and Venting and Oil Spills)* - Emergency Flaring and Venting, and Oil Spills are identified in Table 4-1 as having a “Minor” impact on air quality, however, the second paragraph on page 4-32 in the “Emergency Flaring and Venting” section, and the first paragraph on page 4-33 in the “Oil Spills” section states “...potential impacts as a result of the much smaller reasonably foreseeable accidental gas release (Emergency Flaring and Venting) spills (Oil Spills) analyzed in this Supplemental EIS would be localized and short term, and would have **no impact** on coastal areas....”. The concluding sentence of these paragraphs draws the unsubstantiated conclusion that “the accidental event’s impact on air quality over the OCS and adjacent onshore areas on oil spills is therefore expected to be minor.” If there is no impact to the coastal areas, Table 4-1 should reflect a “negligible” impact for Emergency Flaring and Venting and Oil Spills.

The OCS is not subject to the NAAQS. As explained in the Joint Trades written comments on the Proposed Air Quality Rules (June 20, 2016),

“First, as discussed, under section 5(a)(8) the Secretary’s authority is limited to promulgating regulations for “compliance with the [NAAQS] pursuant to the [CAA] to the extent that activities authorized under [OCSLA] significantly affect the air quality of any State.” Under the relevant state implementation plans, the border of the air quality control regions appears to extend only to the shoreline and not to the respective states’ territorial waters. As such, NAAQS do not apply in the territorial waters.”

Since the NAAQS do not apply to OCS, and BOEM has concluded that emergency flaring and venting and oil spills will have no impact on coastal areas air quality, Table 4-1 must be changed to document a “Negligible” impact from Emergency Flaring and Venting and Oil Spills, as opposed to “Minor”.

7. Multiple Conservative Assumptions in the Draft SEIS Results in a Compounding Effect That Exaggerates the Conclusions

Many of the issues discussed above such as overprediction of future platforms and overly-conservative assumptions regarding onshore wind flows do not have a singular effect on the conclusions of the Draft SEIS. Overly conservative assumptions utilized in multiple ways in the GOM Air Modeling study and the Draft SEIS have a compound effect upon the final results. Inappropriate and inaccurate assumptions and model inputs, taken cumulatively, greatly exaggerate the potential impacts and conclusions presented in the Draft SEIS.

Therefore, it is critical that assumptions and model inputs are realistic and appropriate. Because of this compounding effect, the Joint Trades' recommendation of establishing a collaborative, multi-stakeholder work group to provide input to the GOM Air Quality Modeling study becomes imperative. By establishing a more collaborative, transparent process, where input from stakeholders is considered and utilized, the impact of overpredictions can be minimized and, ultimately, the model results are improved.

B. General comments on other items in the DSEIS

- In comments on the Draft Multisale EIS dated June 6, 2016, API noted the confusion concerning BOEM's use of the acronym "EIA" to describe one thing in the DSEIS (economic impact area) and another in the 5-Year Program Programmatic EIS (environmentally important area). This confusion persists in the Draft SEIS.
- Our review shows that there were no changes between the impact determination table (Table 4-9, p. 4-62) in the Draft SEIS and the Multisale EIS. However, for estuarine systems the cumulative impact for both OCS oil and natural gas and non-OCS oil and natural gas is shown as "major". This is not what is reflected in the text on page 4-63 which describes only minor to moderate impacts.

C. Conclusion

The Joint Trades appreciate the opportunity to provide these written comments on the air quality data that has been made available in the Draft SEIS. However, as discussed in this letter, overall, we remain extremely concerned that BOEM is utilizing an inappropriate process for public review of the GOM Air Quality Modeling study. In addition, we have even greater concern that BOEM is using a yet-unfinished study to justify conclusions regarding potential environmental impacts and to present those conclusions to the public as "best available science." This is clearly not a prudent, sound and common sense approach to policy making.

In addition, the Joint Trades were notified on May 15, 2017 that BOEM extended the comment period until June 14, 2017 to allow for additional review of air quality information in the Draft SEIS. At the time notification of the comment period extension was received, the comments contained in this letter had been finalized. However, the Joint Trades will utilize the additional time granted to continue our review of the Draft SEIS air quality information, and we reserve the right to submit additional comments before the extended deadline of June 14, 2017.

If you have questions or would like to discuss these comments in more detail, please contact Greg Southworth at greg@offshoreoperators.com.

Sincerely,



Andy Radford
Senior Policy Advisor – Offshore
American Petroleum Institute



Randall Luthi
President
National Ocean Industries Association



Lori LeBlanc
Director, Offshore Committee
Louisiana Mid-Continent Oil & Gas Association



Greg Southworth
Associate Director
Offshore Operators Committee



Leslie Beyer
President
Petroleum Equipment & Services Association

cc (via email): Katharine MacGregor, Deputy Assistant Secretary for Land and Minerals Management
Vincent DeVito, Counselor to the Secretary for Energy Policy
Walter Cruickshank, Acting Director, Bureau of Ocean Energy Management
Mike Celata, Gulf of Mexico Region Director, Bureau of Ocean Energy Management
Holli Ensz, Bureau of Ocean Energy Management
Peter Meffert, Bureau of Ocean Energy Management
Helen Rucker, Bureau of Ocean Energy Management

To: Devito, Vincent[vincent_devito@ios.doi.gov]
From: Holly Hopkins
Sent: 2017-05-17T10:23:25-04:00
Importance: Normal
Subject: FW: Secretarial Order 3350 & Blowout Preventer Systems and Well Control
Received: 2017-05-17T10:23:42-04:00

fyi

From: MacGregor, Katharine [mailto:katharine_macgregor@ios.doi.gov]
Sent: Wednesday, May 17, 2017 8:25 AM
To: Cason, James
Cc: Holly Hopkins; Vincent DeVito (vincent_devito@ios.dio.gov); Tom Lillie (Thomas.Lillie@bsee.gov); Doug Morris (douglas.morris@bsee.gov); Lars Herbst (lars.herbst@bsee.gov); Malstrom, Kirk; Daniel Jorjani
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Holly - Thanks for reaching out on this important issue.
-K

On Wed, May 17, 2017 at 8:04 AM, Cason, James <james_cason@ios.doi.gov> wrote:
Holly,

Thanks for the feedback.

Jim

On Wed, May 17, 2017 at 7:51 AM, Holly Hopkins <hopkinsh@api.org> wrote:
Kate,

API, IADC, IPAA, NOIA, OOC, PESA, and the US Oil and Gas Association are pleased to provide detailed information on the final Blowout Preventer Systems and Well Control rule to inform the regulatory and policy review directed by Secretarial Order 3350 and to offer any needed assistance to you as DOI continues to implement the Order.

The Final Well Control Rule is greatly improved from the proposed rule, but numerous concerns still remain. Industry has outlined our concerns in detail in the attached table but wish to highlight four major concerns, in no particular order. Industry remains concerned with the drilling margin requirements in the final well control rule and suggests deleting the new regulatory text and reverting to the previous requirements. That risk-based approach to managing drilling margin in combination with existing regulatory oversight has been demonstrated to safely and economically drill wells. The requirements that exceed the provisions of API Standard 53 (API 53), Blowout Prevention Equipment Systems for Drilling Wells are unnecessary, will not improve safety and will increase risks to operations, which is why, we recommend using the requirements in API 53 as the primary best practice. Rulemaking on RTM is premature, we suggest deleting those requirements. And finally, Industry does not see the need for BSEE to require certification by BSEE-approved verification organizations (BAVOs). Certification can be done by third party organizations; they do not need to be approved by BSEE.

Safety is a core value for the oil and natural gas industry. We are committed to safe operations and support effective regulations in the area of blowout preventer systems and well control. We appreciate the actions of this Administration to eliminate unnecessary burden and to restore certainty and predictability into the offshore permitting and regulatory regimes. We look forward to continued engagement with the Department and you on these important regulatory requirements to assure that the energy that is fundamental to our society can be developed and delivered safely.

Thank you for your consideration of these comments, please do not hesitate to contact us if you have any questions or would like to meet for further discussion.

Thanks,

Holly A. Hopkins
Sr. Policy Advisor, Upstream
American Petroleum Institute
1220 L Street, NW
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202-682-8439 Tel
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This transmission contains information that is privileged and confidential and is intended solely for use of the individual(s) listed above. If you received the communication in error, please notify me immediately. Any dissemination or copying of this communication by anyone other than the individual(s) listed above is prohibited.

--

Kate MacGregor
1849 C ST NW
Room 6625
Washington DC 20240

202-208-3671 (Direct)

To: Secretary of Interior (cdr06@ios.doi.gov)[cdr06@ios.doi.gov]; caroline_boulton@ios.doi.gov[caroline_boulton@ios.doi.gov]
Cc: gareth_rees@ios.doi.gov[gareth_rees@ios.doi.gov]; katharine_macgregor@ios.doi.gov[katharine_macgregor@ios.doi.gov]; catherine_gulac@ios.doi.gov[catherine_gulac@ios.doi.gov]; vincent_devito@ios.doi.gov[vincent_devito@ios.doi.gov]; timothy_williams@ios.doi.gov[timothy_williams@ios.doi.gov]; Marty Durbin[durbinm@api.org]; Khary Cauthen[cauthenk@api.org]
From: Erik Milito
Sent: 2017-05-17T13:26:32-04:00
Importance: Normal
Subject: Final Zinke Offshore Secretarial Order Letter
Received: 2017-05-17T13:28:21-04:00
[170516 - FINAL - Zinke Letter - Sec Order 3350.pdf](#)
[161129 - GOM PDEIS - Final Draft Comment Letter - API-IAGC-NOIA-OOC.pdf](#)
[150522 Final API Ltr BSEE-BOEM Arctic Rules Package.pdf](#)
[160620 Joint Trades Comments - Air Quality Control Reporting and Compliance - Docket ID BOEM-2013-0081.pdf](#)

Secretary Zinke,

API is appreciative of your leadership and the proactive approach that you and the Department have taken to promote domestic energy development. We specifically are encouraged by the steps outlined in Secretarial Order 3350, which advances an America first approach to offshore energy and will help us maintain our position as a global energy leader. We respectfully provide the attached letter (and associated attachments) to inform the regulatory and policy reviews directed by the order and to offer any needed assistance to you as DOI continues to implement the Secretarial Order. In this letter we address broad themes associated with each subject area addressed in the Secretarial Order and provide specific industry concerns in each area.

Again, thank you for your leadership, and we look forward to continued engagement to help drive American energy production forward.

Best regards,

Erik Milito
Group Director, Upstream & Industry Operations
American Petroleum Institute
1220 L Street, NW
Washington, DC 20005
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please notify me immediately. Any dissemination or copying of this communication by anyone other than the individual(s) listed above is prohibited.



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May17, 2017

Honorable Ryan Zinke
Secretary of the U.S. Department of the Interior
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240

SUBJECT: Secretarial Order 3350

The Honorable Secretary Ryan Zinke,

API is pleased to see the Administration and the Department of the Interior (DOI) continuing to take strides to put in place a lasting, domestically-focused energy policy that will help the U.S. “maintain the Nation’s position as a global energy leader.” For too long the U.S. has been hampered by the lack of a strong domestic oil and natural gas energy policy. The oil and natural gas industry is committed to developing and producing domestic energy resources for the benefit of all Americans and doing so in a safe and environmentally sound manner. API represents over 625 oil and natural gas companies that supply most of America’s energy, support more than 9.8 million jobs and 8 percent of the U.S. economy, and, since 2000, have invested nearly \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives.

Secretarial Order 3350, America-First Offshore Energy Strategy, which implements Executive Order 13795, is an important step forward that will help the offshore oil and natural gas industry regain the cost-effective regulatory framework that promotes the certainty and predictability necessary to make the massive capital investments required to bring offshore energy projects to the U.S. economy. This will serve to further the Department’s stated goal “to ensure that responsible OCS exploration and development is promoted and not unnecessarily delayed or inhibited.” This letter is intended to inform the regulatory and policy reviews directed by the order and to offer any needed assistance to you as DOI continues to implement Secretarial Order 3350. In this letter we will address broad themes associated with each subject area addressed in the Secretarial Order and provide specific industry concerns in each area.

API believes there are opportunities to improve many of the DOI rules and policy initiatives while still promoting safety and environmental performance in offshore oil and gas exploration and development. We look forward to further opportunities to work with the Interior Department leadership and staff on these and other rules.

The Secretarial Order highlights many of the rules and policies that API and our industry partners have addressed in extensive comments. Where appropriate we have attached the relevant comments that will help provide specific details of needed changes as DOI performs its reviews of the various regulations, proposed rules, and policy initiatives.

Specific regulatory effort identified in Secretarial Order 3350:

1. Development of a new Five-year OCS Leasing Program. For many years, API has advocated for opening additional OCS areas to oil and natural gas exploration. We believe that it is important that DOI's evaluation of OCS areas is all-inclusive (26 Planning Areas) and that this evaluation does not prematurely eliminate areas that have resource development potential. The multi-step program development process is designed to collect information from all stakeholders, to provide the opportunity for careful analysis and consideration of available information, and to allow the Secretary of the Interior to decide on what areas are best suited for future offshore exploration and development activities. Since the existing process does not allow an area that is removed from consideration at an early stage to be added back in at a later stage, it is important not to prematurely eliminate areas from consideration. One important consideration for DOI to keep in mind is that even though a lease sale is scheduled to be held as part of a Five-year Program, a decision on whether or not to have the sale is not made until the time the sale is scheduled. This allows DOI flexibility to include lease sales in areas that may be under a temporary moratorium (like the Eastern Gulf of Mexico) or where new data is being collected (like the Atlantic) and then make the ultimate decision to hold the sale or not at the time the sale is scheduled. The decisions made now will have long-lasting impacts on U.S. energy policy. API, our members and our industry partners will be involved at all stages of the Five-year Program development. As a trade association, we are not in a position to provide information on specific areas of interest to our members. Rather we can offer that the prospect of lease sales in any given area will spur industry exploration activity which will provide valuable information to the government on the oil and natural gas potential of an area.
2. Cooperate with National Marine Fisheries Service (NMFS) to expedite consideration of Incidental Take Authorization (ITA) requests, including Incidental Harassment Authorizations (IHA) and Letters of Authorization; and, develop and implement a streamlined permitting approach for seismic surveys. This action is long overdue. For over a decade, API and our industry partners have attempted to have DOI and NMFS work together to promulgate incidental take regulations for geological and geophysical (G&G) surveys in the Gulf of Mexico (GOM). Much to our frustration this process has been exceedingly slow in spite of countless industry efforts that have included staff-level and management-level engagements, letters, responses to comment requests, etc. With a looming September 25, 2017 deadline on the expiration of a stay in a lawsuit filed over industry G&G activities in the GOM, this has now reached a near-crisis level. In short, by September 25, 2017 DOI must finish the Programmatic Environmental Impact Statement (PEIS), NMFS must be compelled to propose and finalize incidental take regulations, and NMFS must complete the required consultation with DOI under the Endangered Species Act.

Completing the actions outlined above is complicated by previous agency work. In general, a fundamental flaw with the Draft PEIS was its establishment of an unrealistic scenario in which G&G activities are projected to result in supposed effects to marine mammals that DOI admits are unrealistic overestimates of impact. The supposed adverse effects of this worst case hypothetical scenario were then addressed in the Draft PEIS with burdensome and unsupported mitigation measures. This approach is contrary to both the best available scientific information and applicable law. For over 40 years, the federal government and academic scientists have studied the potential impacts of G&G activities on marine mammals, and have concluded that any such potential impacts are insignificant. The DPEIS's suggestion that such impacts are "moderate" (as opposed to insignificant) is not supported by the best available science and is made possible only by application of overly conservative estimates that DOI admits do not accurately reflect the actual anticipated impacts.

Many of the mitigation measures recommended in certain alternatives presented in the DPEIS are economically and operationally infeasible, will impose serious burdens on industry, and are highly unlikely to result in benefits to protected species. Industry can and will support mitigation measures that are grounded in the best available science and consistent with existing practices that are proven to be effective and operationally feasible. However, we cannot support mitigation measures with no basis in fact or science, which are intended to address presumed adverse effects that will not occur, and which will result in less offshore exploration. As to the alternatives presented in the DPEIS, API finds Alternative A to be the most reasonable because it presents the option that is most consistent with the best available science, operational feasibility, and applicable law.

Unless the faulty assumptions made in the Draft PEIS are corrected, NMFS will be forced to rely on that information to draft the proposed incidental take regulations, which in turn, will likely seek to impose unrealistic and unnecessary mitigation measures on industry. This is contrary to the stated goals of the EO and SO. Detailed industry comments on the DPEIS are attached for your reference.

3. Expedite consideration of Atlantic seismic survey permits. The decision to reverse the previous administration's unjust denial of these permits is welcome news. Subsequent action by the Interior Bureau of Land Appeals to remand the appeals of the denied permits back to the Bureau of Ocean Energy Management for further consideration paves the way for approval of those permits. However, NMFS must be compelled to complete its work on ITA permit applications for true progress to be made in this area.
4. Complete the review of Financial Assurance guidance found in NTL 2016-NO1. DOI has been working closely with the Offshore Operators Committee (OOC) and the OCS Advisory Board of the Petroleum Landman's Association to remedy the shortcomings of DOI's approach on the issues of risk management and financial assurance. API supports this approach and will be evaluating the suggested changes to the NTL that the industry work group is contemplating.
5. Cease activity to promulgate Offshore Air Quality Regulations. API and OOC have been actively engaged with DOI following the issuance of the proposed air quality rule. Based

on industry's extensive comments on the proposed rule (attached) and our engagement over the last year, we believe that DOI had begun to understand the importance of collaborating with industry to gather needed information on our operations in order to promulgate feasible and effective regulations. Industry remains concerned with DOI's ongoing GOM air quality study, particularly with the assumptions made in air quality modelling. Based on our current understanding, we believe the modelling should better reflect actual conditions rather than attempting to depict a worst case scenario. Our efforts to evaluate the work have been hampered by a lack of information. While some information has been made available, still more is required to make a full evaluation. Our recent comments on the Draft GOM Multi-sale Supplement Environmental Impact Statement (attached) detail our current concerns in this area.

Going forward, industry urges DOI to follow an approach similar to that employed in working through the issues associated with the financial assurance NTL (as detailed above). Specifically, we believe the following course of action could be appropriate:

- Create an industry workgroup to provide input on changes to the assumptions and inputs to the modeling study.
- DOI should discontinue the use of its preliminary air quality modeling study results, including their use in NEPA documents.
- DOI should finish its air quality study and use it as input to a revised rulemaking.
- If appropriate based on study results, DOI should restart the rulemaking process with an advance notice of proposed rulemaking (ANPR).

6. Review Offshore Well Control Regulations. The Final Well Control Rule is greatly improved from the proposed rule, but numerous concerns still remain. Seven industry trade associations have been working to outline our concerns with the regulation and its implementation and will be sending a separate letter to DOI that will provide specific details. As a preview, we wish to highlight four major concerns, in no particular order: Industry remains concerned with the drilling margin requirements in the final well control rule and suggest deleting the new regulatory text and reverting to the previous requirements. That risk-based approach to managing drilling margin in combination with existing regulatory oversight has been demonstrated to safely and economically drill wells; the requirements that exceed the provisions of API Standard 53 (API 53), Blowout Prevention Equipment Systems for Drilling Wells are unnecessary, will not improve safety and will increase risks to operations, which is why, we recommend using the requirements in API 53 as the primary best practice; rulemaking on Real-Time Monitoring is premature, we suggest deleting those requirements; and, we do not see the need for BSEE to require certification by BSEE-approved verification organizations (BAVOs). Certification can be done by third party organizations; they do not need to be approved by BSEE.
7. Review Arctic Drilling and Operations Regulations. API and our industry partners continue to believe that access to Alaska offshore oil and natural gas resources under balanced and science-based regulations is essential to the nation's long term economic and energy security. We encourage DOI to embrace the finding in the 2015 National Petroleum Council "Arctic Potential" report. Specifically, that nearly a century of oil and natural gas exploration and production activity in the region demonstrates that development of the Alaska OCS can take place in a safe and environmentally responsible

manner while protecting habitat, wildlife, communities, and subsistence lifestyles. The 2016 Arctic rules package imposes prescriptive requirements based on the premise that a catastrophic spill is inevitable and that one particular combination of technologies and methods should be applied to operations in all locations. Industry's specific concerns are detailed in comments submitted to the agencies during the rulemaking process (attached), and we are prepared to discuss these concerns with the DOI as part of the review directed under the SO.

We appreciate the actions of this Administration to eliminate unnecessary burden and to restore certainty and predictability into the offshore permitting and regulatory regimes. We look forward to continued engagement with the Department and you on these important issues to assure that the energy that is fundamental to our society can be developed and delivered safely.

Thank you again for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Vincent DiVito", with a stylized flourish at the end.

Group Director
Upstream and Industry Operations
American Petroleum Institute

CC:

Counselor to the Secretary for Energy Policy Vincent DiVito
Acting Assistant Secretary Katharine MacGregor
BSEE Director
BOEM Director



Richard Ranger
Senior Policy Advisor
Upstream and Industry Operations
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May 27, 2015

BSEE
Attention: Regulations and Standards Branch
45600 Woodland Road
Sterling, Virginia 20166

Re: [Docket ID: BSEE-2013-0011]

Bureau of Safety and Environmental Enforcement, 30 CFR Parts 250 and 254; Bureau of Ocean Energy Management, 30 CFR Part 550

Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf, RIN: 1082-AA00

To the Regulations and Standards Branch:

The Bureau of Safety and Environmental Enforcement (BSEE) and the Bureau of Ocean Energy Management (BOEM) jointly published proposed new requirements to regulations for exploratory drilling and related operations on the Outer Continental Shelf (OCS) seaward of the State of Alaska (Alaska OCS). The proposed regulations were published in the Federal Register February 24, 2015 at 80 FR 9915 (Volume 80, Number 36, Pages 9915–9971) .

With this letter, API provides its comments to this rulemaking. API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API's members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while safely and economically developing and supplying energy resources for consumers. API members have significant interest in ensuring that there are future opportunities for offshore oil and natural gas exploration and development in the United States ("U.S.") so that the nation can capitalize on industry expertise that has been garnered through years of successful and beneficial exploration, development and production of domestic OCS oil and natural gas resources, including the resources that are believed likely to be found in the Alaska OCS. API members are engaged in exploration and production for crude oil and natural gas in the OCS portions of the Beaufort and Chukchi Seas, and hold leases issued by BOEM in these areas.

1. Overview

API's comments set forth in this letter describe approaches that we believe would best assure orderly, safe and environmentally responsible development of energy resources in the Alaska OCS for our nation's economic and energy security, and for the benefit of the people of the north and the United States as a whole. Our comments are informed by the long experience of our industry with exploration, development and production operations in the Arctic, and by – among other analyses of that experience – the report,

Arctic Potential: Realizing the Promise of U.S. Arctic Oil and Gas Resources, released by the National Petroleum Council March 27, 2015 (NPC Arctic Report). The NPC Arctic Report was commissioned by the request of the Secretary of Energy, Ernest J. Moniz, to the NPC October 23, 2014, and is a comprehensive multi-stakeholder study that considers the research and technology opportunities to enable prudent development of U.S. Arctic oil and gas resources.

2. Access to Oil and Gas Resources in the Alaska OCS under Balanced and Science-Based Regulations Is Essential to the Nation's Economy and Energy Security

As acknowledged in the NPC Arctic Report, the Alaska OCS, including the Chukchi and Beaufort Seas off Alaska, is highly prospective for discovery of new world class hydrocarbon resources. Development of new oil and gas resources is a critical state and national interest. The offshore oil potential of the Alaska OCS is similar to Russia and larger than that of Canada and Norway. The Alaska OCS is estimated to have 48 BBOE of offshore undiscovered conventional resource potential, with over 90% of this in less than 100 meters of water. Furthermore, the Chukchi and Beaufort Sea OCS combined represent over 80% of the total U.S. Arctic offshore conventional potential. The Chukchi Sea offers more potential resources than any other undeveloped U.S. energy basin. The Beaufort Sea also provides among the largest potential undiscovered resource accumulations in the U.S. Together, the oil and natural gas resource potential represented by the Chukchi and Beaufort Seas exceeds the combined resource estimates for the Atlantic and Pacific OCS.

The search for energy resources in the Arctic is not new. The long record of our industry's exploration and production operations in the region demonstrates that exploration and development of oil and natural gas resources in the Alaska OCS can take place in a safe and environmentally responsible manner; can enable the protection of habitat, wildlife, and subsistence resources; and is respectful of the way of life and the communities of the people living in the region. This long record includes exploration, development, production, and transport, and has resulted from continuous technology advances and learnings from experience. Approximately 440 exploration wells have been drilled in Arctic waters overall, including 35 in the Alaska OCS.

America's Alaska OCS can make an important contribution to sustaining our nation's overall crude oil supplies at a time in the future when Lower 48 production – now flourishing due to industry's development of technologies to extract oil and natural gas from shale, tight sandstone and other formations previously thought to be non-economic – is projected to be in decline. As discussed in depth in the NPC Arctic Report, most of the U.S. Arctic offshore oil and gas potential can be developed safely using existing field-proven technology. It is critical that regulation of operations on the Arctic OCS recognize the importance of the resource potential at stake, the record of the operating experience that demonstrates that these resources can be developed in a way that does not harm the Arctic environment nor prevent subsistence, and other uses of that environment. Given the resource potential and long timelines required to bring Arctic resources to market, Arctic exploration today may provide a material impact to U.S. oil production in the future, potentially averting decline, improving U.S. energy security, and benefitting the regional and overall U.S. economy.

Studies show that development of the Alaska OCS would increase economic activity and jobs. Northern Economics in association with the University of Alaska-Anchorage assessed that OCS development would add approximately \$145 billion in new payroll for U.S. workers and \$193 billion or more in new local, state, and federal government revenue combined over 50 years.¹ The projected net revenues to the state of Alaska

¹ *Economic Analysis of Future Offshore Oil and Gas Development: Beaufort Sea, Chukchi Sea, and North Aleutian Basin*, by Northern Economics in association with the Institute of Social and Economic Research at the University of Alaska-Anchorage. Feb. 2011. The study notes that “[t]he scenarios used were based in part on the scenarios discussed by the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) in published Environmental Impact Statements (EIS) and other materials. . . . The recent Draft Environmental Impact Statement for the *Beaufort and Chukchi Sea Planning Areas, Oil and Gas Lease Sales 209, 212, 217, and 221* was issued after the analysis for this report was completed. The scenarios used in this report are based on earlier scenarios and other material that are broader in scope and duration than the November 2008 draft EIS.”)

from OCS development could be about \$6.6 billion (2007\$). Today oil and gas development is one third of the state of Alaska's economic activity and provides about 90% of the state's general revenue. The North Slope Borough oil and gas property taxes have exceeded \$180 million annually since 2000, representing about 60% of their annual operating budget. One-third of Alaska's jobs—127,000—are oil-related and depend on oil production.

The economic assessment put forward in the proposed rules significantly and systematically underestimates the potential impact to industry which is likely to challenge the economics of potential large scale investments. The assessed ~\$1 billion cost to industry over the 10 year assessment period fails to address the impacts of shortening the effective drilling season (driven primarily by a same-season relief well requirement) and utilizes assumed spreadrates for drilling and emergency response facilities that are far lower than demonstrated by industry experience. Across the board, the agencies' estimated costs are drastically low, sometimes by several orders of magnitude. After adjusting the proposed economic assessment on these two factors noted above alone, the estimated cost to industry is estimated at \$10 - 20 billion, and could potentially be higher. Such a cost burden would establish economic barriers that would profoundly reduce the ability for this nation to develop its arctic resources.

Moreover, the agencies' benefits justification for these costs is based on the agencies' faulty premise that a catastrophic oil spill will take place on Alaska's OCS in the next ten years. BOEM's previous analyses, and most recently its analysis undertaken as part of the Second Supplemental Environmental Impact Statement (SEIS) in support of Lease Sale 193, flatly contradict this assumption, and the agencies provide no support for the assumption. Indeed, the Lease Sale 193 SEIS concludes that there is a less than one percent chance that even a large oil spill (>1000 barrels) will occur during exploration. *See* <http://www.boem.gov/Risk-and-Benefits-in-the-Chukchi-Sea/>.

Of central importance in our nation's ability to benefit from the resource endowment of the Alaska OCS will be regulatory approaches that establish alignment of policy and consistency in regulation among agencies with jurisdiction over operations, and that support decision making with information and processes that take advantage of advances in science and technology. As the NPC stated in its report:

“Oil and gas exploration and development in the Arctic is extensively regulated. Drilling an offshore exploration well in the Arctic currently requires permitting from at least 12 principal state and federal agencies; progressing offshore development in the Arctic would require around 60 permit types through 10 federal agencies. Regulations should be adaptive to reflect advances in technology and ecological research, and achieve an acceptable balance considering safety, environmental stewardship, economic viability, energy security, and compatibility with the interests of the local communities. Prescriptive regulation may inhibit the development of new, improved technologies by suppressing the potential opportunity that drives advancement.”²

With this letter, API offers recommendations to best assure that this “acceptable balance” can take shape.

3. API Urges Adoption of Regulations That Accommodate a Broader Range of Equipment and Drilling Platforms

The proposed rules limit their consideration to a particular approach to drilling based on use of a floating rig, and the result is prescriptive rules that require particular equipment to the exclusion of other approaches that could be safely and effectively used. In a great many areas in the Arctic OCS, the conditions at prospective drill sites allow use of alternatives to floating rigs. Nevertheless the proposed regulations

² National Petroleum Council. *Arctic Potential: Realizing the Promise of U.S. Arctic Oil and Gas Resources*. 2015.

appear to be written from the perspective that the only foreseeable approach to exploration drilling projects in the region will involve floating rigs, and equipment and support systems compatible with floating rigs. This makes these Arctic-specific rules different than those that apply to other areas of the OCS and there is no Arctic-specific reason or justification for this.

In fact, wells in shallow waters of Beaufort Sea have been safely drilled in the past with bottom-founded or iced-in rigs, but such rigs may not be able to accommodate a containment dome or a mudline cellar, and so use of this type of rig would likely be precluded by the proposed rules. Jackup rigs are safe and viable in waters up to 300 feet deep in the Chukchi Sea—but the requirements prescribed in the proposed rules may eliminate their potential use, without providing any basis for such a limitation on operators' exploration plans. The rules should be more flexible and based on performance standards, in order to accommodate different, new, and better approaches.

It's not uncommon for BSEE to adopt regulations that accommodate different rig types, but for reasons unexplained, BSEE and BOEM did not take that approach here. The result is a rulemaking proposal that unnecessarily precludes approaches that do not align with the prescriptive rules it contains, but that based on industry's operating experience in the region can be shown to be safe and effective. In some cases, the proposed regulations refer to the possibility of alternative equipment, but there are no standards or criteria to provide any guidance on how alternative equipment would be evaluated for approval. Overall, if the regulatory focus is on floating rigs, then the rules should be applicable only to floating rigs. Alternatively, the rules could adopt a broader, more flexible and performance-based approach such as found in rules applicable to other areas of the OCS which do not prejudice the choice of drilling platforms.

4. API Urges Withdrawal of the Proposed Requirement that Operators Submit an Integrated Operations Plan (IOP)

API requests that BOEM not adopt proposed Section 550.204 that requires that operators proposing exploratory drilling activities on the Arctic OCS submit an Integrated Operations Plan (IOP) 90 days prior to filing an EP (Exploration Plan). The EP, required under OCSLA, is meant to provide the agency the information necessary to achieve its regulatory objectives pursuant to OCSLA requirements governing an operator's planned activities. In the event the EP does not meet the intended requirements, the appropriate steps should be taken to amend the EP process, rather than creating additional regulatory requirements.

Much of the information required in the IOP under proposed Section 550.204 is already gathered and submitted as part of an operator's EP, provided under existing SEMS regulations, or submitted as part of an operator's oil spill response plan. Some of the new information requested by BOEM is either outside the regulatory authority of BOEM or the agency's scope of expertise. This is acknowledged in the discussion of the IOP in the proposed rule, where the agencies explain, "the USCG administers laws and regulations governing maritime safety, security, and environmental protection and is also responsible for inspecting the vessels to which those laws and regulations apply." Nevertheless, while the proposed rule "acknowledge[es] the USCG's principal jurisdiction over vessel safety and security," it goes on to state that requesting duplicative information "early in the process . . . is also essential to DOI's statutory and regulatory responsibilities related to Arctic OCS oil and gas activities." This discussion fails to consider that BSEE or BOEM could obtain information in which it is interested from another agency that has jurisdiction over the matter of concern.

API also objects to the IOP for the reason that in many cases the information to be furnished in an IOP will be unobtainable based on the timeline the agencies proposed for submission of the document. BOEM has estimated that the submission of an IOP, including all required information will impose a time burden of only 90 hours per plan. BOEM notes that "[i]ndustry already compiles this information internally for

planning and contract oversight; therefore, the burden expected is minimal, just to prepare and submit to BOEM.” This statement is unsupported and inaccurate. While planning for exploration projects is a constant, the timing of availability of certain types of information can vary for many reasons. This factor alone could drastically increase the time burden estimated by BOEM by compelling an operator to compile this information to satisfy the particular timing of a compliance requirement as opposed to the requirements of a project and the sequence of decisions from a business or operational point of view. The preparation of an IOP for submittal could easily exceed the 90 hours of work estimated by BOEM, between compiling and drafting the plan for submittal and then (in all likelihood) having to respond to a large volume of requests for additional information from BOEM and other agencies. It is not clear how this additional compliance requirement would add value or provide information that the agency does not otherwise obtain through the EP or from other agencies.

If the IOP requirement remains intact in the final rule, API urges BOEM to provide clarification as to the role and authority of the reviewing agencies identified in the proposed rule. In the preamble to the proposed rule, DOI notes that “[t]hough BOEM would review the IOP to ensure that the operator’s submission addresses each of the elements listed in § 550.204, the IOP would not require approval by DOI or the other relevant agencies. Instead, the IOP would be an informational document intended to facilitate early review of important concepts related to an operator’s proposed exploratory drilling program.” API requests that DOI clarify what the process is following submittal of an IOP under the proposed rule. Specifically, it should be clear whether an operator is obligated to respond to requests for additional information from BOEM, BSEE, or the other agencies DOI proposes to provide access to the document. If operators are obligated to respond to such requests, associated review timings should be established to ensure operators receive feedback within 45 days of submission. This would provide operators with the opportunity to review and, if needed, amend their EP before final submission. Furthermore, it should be clarified whether EP approval will be dependent upon the completion of all requests for additional information stemming from the IOP.

API urges that the IOP requirement should be withdrawn.

5. API Urges Adoption of Regulations That Accept Alternative Approaches to Response to Loss of Well Control

API recognizes the interest of the agencies in assuring that operators in the Alaska OCS demonstrate that they would have access to, and could deploy, well control and containment resources that would be adequate to promptly respond to a loss of well control. In this area of unquestioned importance, API urges the agencies to recognize that relief wells have historically not been used to regain well control, and, in terms of stopping the flow and securing the well as quickly as possible, they may not represent the best solution when compared to recent technological advances such as capping stacks and seabed isolation devices. For these reasons, API urges the adoption of a more flexible regulatory approach that considers fit-for-purpose response planning alternatives to respond to loss of well control in the context of a given EP and the operating conditions it will be subject to.

a. Overview: The Need for Risk-Based Approaches to Well Control

Existing BSEE regulations (30 CFR § 250.141) provide that an operator “may use alternative procedures or equipment” after receiving approval from the appropriate Regional Supervisor,” if the proposed alternative “provide[s] a level of safety and environmental protection that equals or surpasses current BSEE requirements.” The proposed rule notes this existing regulatory provision and states that “operators may request approval of alternative compliance measures to the relief rig requirement in accordance with 30 CFR § 250.141.” See proposed 30 CFR § 250.472. This equivalency provision fails in several significant regards to address the issues created by the same season relief well proposal .

Firstly, the proposed rules fail to describe how an operator should demonstrate equivalency to a same season relief well, nor do they address the perceived risk reduction benefit, which is critical to establishing the baseline expectation. Secondly, and more fundamentally, the proposed rules fail to establish why a same season relief well should be a blanket requirement across all Arctic OCS MODU activities despite the range of risks to be considered and the numerous other available industry technologies and methods that have previously been utilized to successfully control wells.

b. API Urges Action on the NPC Arctic Report’s Recommendation to Quantify the Risks and Benefits of Alternatives to a Requirement for a Same Season Relief Well

The additional human and environmental risk introduced into an operation by providing for a same season relief well on stand-by argues for careful consideration of alternative measures to address loss of well control. In the low probability event of a loss of containment event, “relief” would not come from a second well, but rather from a source control tool that could be swiftly deployed, such as a capping stack. In lieu of imposing a requirement for a relief well, which carries with it many of the same risks as drilling the exploration well, API urges the agencies to act on the recommendation described in the NPC Arctic Report, that the industry and appropriate U.S. government agencies initiate a study to develop methodology to quantify the risks and benefits of multiple current barrier technologies, using appropriately detailed reliability data and assessments. The NPC Report further recommends that the results consider overall acceptability of risk levels, contribution of different risk mitigation practices, and justification of current practices on an as-low-as-reasonably-practicable basis, with comparison to other industries. The regulations should address separately, and in a performance-based manner, the objectives an operator must meet around source control versus a final kill of a well. Practices in assessment techniques from the nuclear, aviation, and petrochemical industries such as accident sequence precursor analysis are suggested for consideration. With a focus on spill prevention and barriers, such a study could be used as a basis to identify effective equivalent technologies for response to loss of well control in place of a requirement for a same season relief well. The time and ice/metocean conditions needed to enact these approved plans could then form the basis for determining an appropriate season end for primary drilling operations on a case-by-case basis.

Ultimately, BSEE’s proposed same season relief well requirement fails to follow longstanding executive guidance regarding effective and efficient performance-based regulations. Executive Order 13563, which affirms and expands upon the regulatory principles established by Executive Order 12866, states that regulations should, “to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.” This preference for performance-based regulation was reinforced most recently in the recommendations put forth in the Presidential Commission Report to the President on Deepwater Horizon (2011), which stated: “The Department of the Interior should develop a proactive, risk-based performance approach specific to individual facilities, operations and environments, similar to the ‘safety case’ approach in the North Sea.” Executive Order 13563 also mandates that agencies “consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives.” Given this express preference for performance-based regulations, BSEE should eliminate the same season relief well requirement and provide instead a requirement that an operator demonstrate in its plans that it has assets that can address a source control event. An operator should be permitted to select technology that is best suited to meet this objective within the confines of that operator’s particular plan.

c. The Importance of Prevention, Achieved through Prudent Well Design

The NPC Arctic Report describes in detail industry’s primary approach to loss of well control is prevention – achieved through adherence to established codes/standards and operations integrity management systems combined with a culture of safety and risk management. Wells can be safely drilled when designed for the range of risks anticipated, equipment has the required redundancy, personnel are trained, drills/tests are

conducted, and established procedures are followed. The primary method to achieve prevention is through focus from the rig floor to the executive office on training, on operations consistent with training, and on prudent well design. Multiple spill prevention measures and barriers are currently designed into the wells drilled in the OCS, and these barriers are defined and specified in API/ISO standards and offshore regulations enforced by BSEE and BOEM. Drilling fluid, casing design, cement, and other well components are the primary barriers and the blowout preventers (multiple redundancies) are the secondary barrier to prevent a release to the external environment. This is the case whether a well is drilled in a temperate water or Arctic marine environment.

After the Macondo incident in 2010, OCS operators, BSEE, and API significantly upgraded regulations and standards with respect to well integrity and well control. Operators must follow a strict set of controls that require extensive verification, testing, and certification of well control equipment, well designs, and barriers to the flow of hydrocarbons. In U.S. federal waters, there is ample regulation to ensure operators and rig owners follow prudent practices. BSEE regularly sends inspectors to the drilling rigs to verify compliance. Furthermore through its Standards program, API has numerous documents that specify the equipment and procedures for well integrity and for rigorous drilling practices. In the highly unlikely event that all of the normal barriers fail during a drilling operation, the industry has also developed new subsea shut-in devices and capping stack technology that has substantially increased capability to secure a well from any uncontrolled flow of hydrocarbons.

d. The Role and Utility of Relief Wells

A relief well is a directional well drilled to communicate with a nearby uncontrolled (blowout) wellbore and control or stop the flow of reservoir fluids. If it is assumed that the original rig is disabled, a second rig would need to be mobilized and brought into proximity of the flowing well. The second rig would need to be equipped with casing, cement, drilling fluids, and wellhead equipment to construct the relief well. The distance between the blowout well and the relief well typically ranges between 500 feet and 3500 feet.

The Minerals Management Service published two papers³ on statistical data for blowout wells in the outer continental shelf of the U.S. These studies covered the 35 years from 1971 to 2006. These reports state, “Although relief wells were initiated during several of the blowouts, all of the flowing wells were controlled by other means prior to completion of the relief wells.” The same situation occurred during the Macondo incident where well control was regained at the source through installation of a capping stack, not by drilling a relief well. Reliance on the false premise that relief wells provide a primary means of regaining well control would not only add substantially to already high drilling costs, it would also introduce risk by reducing the incentive or ability for an operator to use more effective alternatives appropriate to a given drilling program.

e. Well Control Response Technologies in the Arctic Operating Context

Among the reasons why API and its members are very concerned about the imposition of a requirement for same season relief wells is the effect that such a requirement would have on the already short season for exploratory drilling in much of the Alaska OCS. An explanation of the basis of this concern is in order.

The technical ability to explore and develop in the offshore Arctic is governed by a number of key factors, including water depth, ice conditions, and the length of the open water season. Drilling rigs that rest on the seafloor have a maximum usable depth of about 100 meters in ice; deeper water requires floating rigs. Exploration can be carried out in waters with a short ice-free season using floating drilling rigs in waters deeper than about 20 meters, but development and production generally requires year-round operation to be

³ Izon, David, Danenberger, E.P., and Mayes, Melinda, “Absence of Fatalities in Blowouts Encouraging in MMS Study of OCS Incidents 1992-2006”, *Drilling Contractor* magazine, pages 84-90, July/August 2007; Danenberger, E.P., “Outer Continental Shelf Drilling Blowouts, 1971-1991”, OTC #7248, 25th Annual Offshore Technology Conference, Houston, Texas, May 1993.

economic, which means using facilities that rest on the seafloor and are resistant to ice forces in ice-prone areas.

Most of U.S. Arctic offshore resources are in less than 100 meters of water and have some open water season. As a result, exploration is possible during summer and shoulder seasons with floating drilling rigs, and development and production are technically possible using conventional bottom-founded drilling facilities with numerous support vessels including oil spill response vessels. Such technology has been field-proven in neighboring regions such as Canada where 39 offshore, incident free wells were drilled in pack ice conditions during the late 70's and 1980's.

Current regulations and permit conditions only allow exploratory drilling activity during the open water season. The U.S. Arctic open water season is typically only 3 to 4 months long and can be much shorter in a given year or be shortened by mid-season ice intrusions. The useful drilling period is further shortened by restrictions in recent permits requiring the ability to drill a same season relief well before the onset of ice. The useful drilling season may also be shortened as a result of voluntary agreements or regulations requiring an operator to cease operations to accommodate subsistence harvesting and marine mammal migration. It should also be recognized that the potential exists for the effective season length to be further reduced due to ice / metocean conditions that necessitate suspending active operations or in years of late melting / early freeze up.

The proposed regulations would make it difficult, and in many cases, impossible, to complete one well in a single season. Any cost-benefit analysis of this rule package should account for the erosion to an operator's portfolio caused by the lost drilling days attendant to a requirement for a same season relief well. The fewer days an operator has during the open-water season to explore its lease, the greater the number of its leases that will expire before they can be evaluated. The size and distribution of Arctic OCS resources are expected to require multiple wells to evaluate recoverable resource size and development concept and commerciality. Multiple expensive mobilizations over many years would therefore likely be necessary to complete exploration of a prospect, substantially reducing the economic feasibility of offshore Arctic development. This subject is discussed in additional detail in the NPC Arctic Report, where it is noted that the U.S. lease system is development based. In other words to retain a lease, the operator must have gained enough information to be able to move into the commercial development phase by the end of the 10-year primary term for an OCS lease. The short drilling season in the Arctic can make this determination practically impossible to achieve within the 10 year term when the drilling of several wells may be required to enable appraisal of a field. Other Arctic nations acknowledge this factor through longer lease terms, or by providing an Operator the ability to retain a lease through the duration of exploration phase allowing extra time to determine technical or commercial viability (please see NPC Arctic Report Executive Summary at pages ES-25 through ES-26).

f. Primary and Secondary Barriers Described

In Arctic environments, API believes it will be more effective from the standpoint of management of human and environmental risk in the Arctic offshore to focus on prevention and alternate methods than on a relief well plan. Prevention through prudent well design and operations should be the primary method for containment. Alternate methods such as capping stacks or subsea shut-off devices are a secondary method of spill mitigation and containment. A capping stack could be installed much more quickly than a relief rig could be deployed and put in operation (days instead of weeks), and a subsea shut-in device could be activated in minutes. Additionally, in certain situations supplemental subsea equipment could be used to increase the range of blowout preventer (BOP) functions to further increase capability to perform well control operations.

As noted in the NPC Arctic Report, the industry has made significant advances in being able to prevent, contain, and mitigate impacts of spills in Arctic environments. Prevention is maintained through a set of primary and secondary barriers.

The primary barriers maintain control against backward flow of formation fluids during the drilling process. These begin with well planning and design based on knowledge of the subsurface formations and fluid pressures gained from seismic exploration. Steel casing and wellheads are designed to withstand formation pressures, and specially formulated cement seals the steel casing to the borehole. The weight of the drilling fluid column is designed and monitored to offset subsurface formation pressures. Careful control of the drilling process is facilitated by having a crew of well-trained personnel who constantly monitor well stability. This includes the use of sensors located near the drill bit that continuously measure downhole conditions and transmit them to the drilling control room and surface measurements of the drilling fluid volume and flow rates, as well as geoscientists onsite who analyze the rock cuttings from the well.

Secondary barriers include procedures to detect and control deviations from normal operating conditions and the BOP. An example of a deviation is an influx of formation fluids into the wellbore, also called a “kick.” Kicks are detected using equipment located on the deck of the drilling rig. If formation fluid flows into the wellbore, an increase in the volume of returning drilling fluid can be detected in the mud tanks and/or by gas detectors. A trained drilling crew will detect this and take the necessary action, which normally involves closing the BOP or pumping heavier mud into the wellbore.

The BOP has multiple, redundant, sealing components that can be remotely activated to close around or shear through pipe and seal the wellbore to provide containment of fluids in the event of a loss of well control. BSEE has numerous requirements for BOP tests. The BOP stack must be fully pressure tested every 14 days for subsea BOPs and every 21 days for surface BOPs, and a function test must be conducted every week. Also, the BOP stack must be pressure tested upon initial hook-up to the wellhead and after each casing string is set. Additional regulations implemented post-Macondo for BOPs include requirements to inspect for repair or remanufacturing at least every five years per the equipment owner’s PM program and the manufacturer’s guidelines. This maintenance may be performed on a staggered basis during the 5 year period. To ensure a broad range of BOP stack functionality, regulations require a minimum number of annular preventers, pipe rams and blind/shear rams, and additional redundancy such as two control stations, one located near the rig floor and the other distant from the rig floor.

Following loss of well control, other response measures are designed to limit the size of a spill once containment is lost and to respond to any spill. Flow-reduction measures are employed to decrease the rate of outflow by increasing the dynamic back-pressure applied by pumping through the BOP or other subsea devices. Flow-stoppage measures are employed to stop the outflow of a well to the environment through the use of shut-in devices such as a capping stack or a subsea isolation device at the seafloor whose operation is totally independent of the BOP. These tools are designed to stem any uncontrolled flow of oil as rapidly as possible to minimize damage to the environment. The final available flow-stoppage measure is a relief well, which is a separate well drilled to intercept and permanently stop the flow from a blown-out well. In all cases to date, OCS subsea well control has been regained at the wellhead without the use of a relief well.

6. API Urges that BSEE Not Grant Discretionary Authority to Restrict Discharge of Water-Based Muds and Cuttings that Have No Adverse Effect on the Environment

The U.S. Environmental Protection Agency, or a state environmental agency designated by EPA, not BSEE, regulates discharges of drilling muds and cuttings to state and federal waters of the U.S. Current National Pollutant Discharge Elimination System (NPDES) permits allow discharge of WBM and cuttings to federal, but not state, waters if they meet restrictions in the Effluent Limitation Guidelines (ELG).⁴

⁴ Neff, J. M. Fate and Effects of Water-Based Drilling Muds and Cuttings in Cold Water Environments. May 2010. Much of the discussion in this Section 6 is adapted or excerpted from this publication.

Proposed new section 250.300 would add provisions requiring the operator to capture all petroleum-based mud, and associated cuttings from operations that use petroleum-based mud, to prevent their discharge into the marine environment during exploratory drilling operations on the Arctic OCS. These provisions would also give the Regional Supervisors discretionary authority to require operators to also capture all water-based mud (WBM) and associated cuttings from Arctic OCS exploratory drilling operations (after completion of the hole for the conductor casing) to prevent their discharge into the marine environment based upon the Regional Supervisor's assessment of proximity to hunting and fishing grounds or what are described as showings of adverse effects on marine mammals, fish or their habitat. API is concerned that incorporation of this language into the rule will establish an expectation that the Regional Supervisor will exercise his authority to restrict discharge of WBM and associated cuttings despite abundant evidence that such discharges have no significant impact on the marine environment.

a. Description of Water-Based Muds and Cuttings and Their Environmental Effects

WBM consist of fresh or salt water containing a weighting agent (usually barite: BaSO₄), clay or organic polymers, and various inorganic salts, inert solids, and organic additives to modify the physical properties of the mud so that it functions optimally. Drill cuttings are particles of crushed rock produced by the grinding action of the drill bit as it penetrates the earth.

The total mass of WBM and cuttings discharged per exploratory well is about 2000 metric tons/well, and somewhat less for most development wells. Assessment of the fate and effects of drilling discharges has shown that water column impacts are transient and limited in spatial extent. When WBM and cuttings are discharged to the ocean, the larger particles and flocculated solids, representing about 90 % of the mass of the mud solids, form a plume that settles quickly to the bottom. The spatial extent of any such settled cuttings and muds is dependent on the oceanographic conditions in the area. Typically though, these effects are limited to within hundreds of meters of the well site, and depending on the drilling mud type, usually the duration of measurable effect on the environment is measured in years, not decades. The remaining 10 % of the mass of the mud solids consisting of fine-grained unflocculated clay-sized particles and a portion of the soluble components of the mud form another plume in the upper water column that drifts with prevailing currents away from the platform and is diluted rapidly in the receiving waters. In well-mixed ocean waters, drilling muds and cuttings are diluted by 100-fold within 10 m of the discharge and by 1000-fold after a transport time of about 10 minutes at a distance of about 100 m from the platform. Because of the rapid dilution of the drilling mud and cuttings plume in the water column, harm to communities of water column plants and animals is unlikely and has never been demonstrated.

WBM and cuttings solids settle to and accumulate on the sea floor. If discharged at or near the sea surface, the mud and cuttings disperse in the water column over a wide area and settle as a thin layer of a large area of the sea floor. If mud and cuttings are shunted to and discharged just above the sea floor in order to protect nearby sensitive marine habitats, the drilling solids may accumulate in a large, deep pile near the discharge pipe. Effects of WBM cuttings piles on bottom living biological communities are caused mainly by burial and low sediment oxygen concentrations caused by organic enrichment. Toxic effects, when they occur, probably are caused by sulfide and ammonia byproducts of organic enrichment. Recovery of benthic communities from burial and organic enrichment occurs by recruitment of new colonists from planktonic larvae and immigration from adjacent undisturbed sediments. Ecological recovery usually begins shortly after completion of drilling and often is well advanced within a year. Full recovery may be delayed until concentrations of biodegradable organic matter decrease through microbial biodegradation to the point where surface layers of sediment are oxygenated.

WBM are non-toxic or practically non-toxic to marine animals, unless they contain elevated concentrations of petroleum hydrocarbons, particularly diesel fuel. Most drilling mud ingredients are non-toxic or used in such small amounts in WBM that they do not contribute to its toxicity. Chrome and ferrochrome lignosulfonates are the most toxic of the major WBM ingredients. Although used frequently in the past in

the Gulf of Mexico, these deflocculants are being replaced in most WBM by non-toxic alternatives to reduce the ecological risk of drilling discharges.

Many field monitoring studies, mostly in the U.S. Gulf of Mexico and the North Sea, have been performed since the 1970s to determine short- and long-term impacts of drilling discharges on the marine environment. As a general rule, effects of WBM and cuttings discharges on the bottom environment are related to the total mass of drilling solids discharged and the relative energy of the water column and benthic boundary layer at the discharge site. In high energy environments, little drilling waste accumulates on the sea floor and adverse effects of the discharges can not be detected. In low-energy environments or where mud and cuttings are shunted to near the sea floor, large amounts of mud and cuttings solids may accumulate on the sea floor and adversely affect bottom communities within a few hundred m of the discharge.

b. Water-Based Muds and Cuttings in Arctic and Cold Water Marine Environments

More than 50 exploratory wells were drilled in the State and Federal waters of the U.S. Beaufort Sea and Chukchi Sea between 1981 and 2002. The exploratory wells were in 18 to 167 feet of water. Drilling muds and cuttings were discharged from most of these wells directly to the water in the open-water season, or to the surface of the ice or under the ice in the shore-fast ice season. Ocean discharges of WBM and cuttings from several of the Beaufort Sea exploratory wells were monitored. The results of these studies were consistent with the conclusions of the 1983 National Research Council (NRC) report on drilling discharges in the marine environment: disturbance to the marine environment was minor and recovery was rapid.

The U.S., MMS, BSEE, and the oil industry have been monitoring the effects of drilling activities in the development area of the Alaskan Beaufort Sea for more than 20 years. The monitoring has shown that little metal, mostly barium, and petroleum hydrocarbons accumulate in sediments within a few hundred feet of gravel drilling islands and WBM and cuttings discharges. The increase over background concentrations of barium and occasionally other metals in sediments near drilling operations is insufficient to cause harm to local bottom-dwelling marine invertebrates. Since all these metals are tightly bound to solid particles (barite or clays), they are not bioavailable or toxic to bottom-dwelling marine organisms. Environmentally significant increases in the concentration of petroleum hydrocarbons, particularly polycyclic aromatic hydrocarbons (PAH) in Beaufort Sea sediments have not been detected. Similar results have been reported at drilling sites in the Dutch, United Kingdom and Norwegian North Sea where only WBM and cuttings were discharged.⁵

Prohibition of discharge of WBM and associated cuttings would achieve no ascertainable benefit to the marine environment and would impose unreasonable logistical challenges and costs on operators relating to the interim storage and later transport of these materials.

7. API Urges Agencies Not to Introduce Regulations Incremental to the Existing Standards Established by the EPA for Cuttings Management in the Arctic OCS

Proposed new section 250.300 would add provisions requiring the operator to capture all petroleum-based mud, and associated cuttings from operations that use petroleum-based mud, to prevent their discharge into the marine environment during exploratory drilling operations on the Arctic OCS. The Clean Water Act grants EPA jurisdiction over all facilities which discharge pollutants from any point source into waters of the United States. This includes drill cuttings discharged from a rig into waters of the U.S. in Arctic

⁵ Neff, J. "Fate and Effects of Water Based Drilling Muds and Cuttings in Cold Water Environments". Duxbury MA, May 2010.

regions. Under EPA regulations control is already established to ensure that when cuttings discharge is permitted the associated impact to the environment is reduced to acceptable levels. Introducing an additional and redundant layer of regulation by BSEE may not only be outside the scope of BSEE's authority but it will inevitably lead to confusion and conflicts.

In many situations the ability to discharge cuttings provides Operators the opportunity to demonstrate the net environmental benefits associated with offshore treatment and discharge versus alternative approaches. In addition, increased regulation of cuttings management without consideration of net environmental effects, i.e. blanket prohibition of non-aqueous fluids (NAF) cuttings discharge, could hinder Operators' ability to use the most effective mud system for the well and increase the likelihood of operational issues.

In operations where cuttings capture and transport is required, a number of additional critical path activities are introduced including incremental cuttings processing, container lifting/handling and vessel transfers. These activities are dependent not only on equipment uptime but also local metocean conditions and when processing capability is compromised drilling operations must be suspended or progressed at a reduced rate. These potential impacts to operations increase the likelihood of downhole issues which could lead to significant wellbore stability non-productive time (NPT) events. Such potential complications need to be carefully considered as part of any cuttings management system.

As a result of the overall complexity associated with both NAF and WBM cuttings management we urge BSEE and BOEM to recognize the authority of EPA to regulate discharge of drilling muds and cuttings, and to delegate this authority to the states. Instead of proposing redundant regulations, BSEE and BOEM should focus the proposed regulations on ensuring the current requirements are met during the well permitting and execution process. Such an approach will also allow industry to implement new and improved technologies that will further reduce the net environmental impact while further increasing overall operations integrity.

8. API Urges Agencies Not to Require Tests of a Blow-Out Preventer at a Frequency That Would Risk Affecting Reliability and Integrity of Equipment

In new rule 250.447 BSEE proposes to revise paragraph (b) of this section to require a BOP pressure test frequency of one test every 7 days for Arctic OCS exploratory drilling operations. On this subject of the frequency of tests of BOP equipment and systems, API urges BSEE not to increase the frequency of BOP testing from every 14 to every 7 days. Under current regulations, BOP functionality is already confirmed every 7 days via a full function test, (CFR 250.449 Paragraph h) in addition to the full pressure tests every 14 days. Based on the experience of testing of subsea BOPs in the Gulf of Mexico, generally followed by BSEE non-acceptance of reported anomalies reliable evidence exists that too frequent a cycle of testing does not improve BOP reliability and longevity, and the continuous testing and pulling for repair and additional testing of BOP's can be detrimental to their state of readiness and long term reliability. The data does not show that more testing is necessary or will increase reliability. Further there is no technical basis that BOP's in the Arctic should have any difference in test frequency. BOPs are commonly used in the Arctic today – just not in Federal waters. The surface BOPs used in State waters and on land (and BOPs installed in GOM deepwater environments) are working in very cold conditions and have years of history of successful use and testing. Furthermore BOPs are often used in the normal course of drilling a well unrelated to well control and occasionally to circulate small well inflows. Thus BOPs are not just an emergency device and test frequency that could adversely affect their readiness and long term reliability are neither in the interest of operational safety nor environmental protection.

9. API Urges Regulations That Support Flexibility in Oil Spill Response and That Accept Selection and Execution of Strategies That Are Most Effective Given the Circumstances of a Spill

On the matter of prevention, preparedness and assurance of a capability of response to oil spills from drilling and production operations in the Alaska OCS, API believes that both regulation and operations must be informed by the following:

- The role of prevention as the primary defense against loss of well control
- Recent technical advances in source control
- The long history of research into oil behavior and spill response in ice
- Flexibility to select and execute the most effective strategy or strategies in context with the situation in the event response to a spill is required

The greatest reduction of environmental risk comes from preventing any loss of well control. This is achieved through adherence to established codes/standards and operations integrity management systems, combined with a culture of safety and risk management. Industry's primary approach to prevention is guarding against loss of well control. A major well-control event is extremely unlikely, and recently upgraded U.S. regulations, standards, and practices make the likelihood of a major well control event even less likely. Recent steps taken to improve safety include certification by a licensed professional engineer that there are two independently tested barriers across each flow path and that the casing design and cementing design are appropriate and independent third-party verification of the BOP. These engineering safeguards are backed up by requiring strict adherence to operations integrity management systems as part of an overall culture of safety and risk management. The multiple spill prevention measures and barriers that are designed into the wells are defined and specified in U.S. and international standards and U.S. offshore regulations. Arctic well design and construction follows these standard offshore well practices.

Additional well control devices and techniques are now available that are independent of the controls on the drilling rig. Examples of these devices are capping stacks that are deployed after an incident to stop the flow from the well and subsea isolation devices installed before the well encounters potential hydrocarbon-bearing zones in addition to standard BOP. These systems offer a dramatic reduction in worst-case discharge volumes because they are designed to stop the flow of oil in a matter of minutes, hours, or days versus weeks or months. Consequently, they can provide a superior alternative for quickly stopping the flow, minimizing the spilled volume of hydrocarbons and securing the well than that offered by the requirement for same season relief well and/or oil spill containment systems.

Over the past four decades, the oil industry and government have made significant advances in being able to detect, contain, and clean up spills in Arctic environments. Many of these advances were achieved through collaborative international research programs with a mix of industry, academia, and government partners. Much of the existing knowledge base in the area of Arctic spill response draws on a long history of experiences with a number of key field experiments, backed up by laboratory and basin studies in the United States, Canada, Norway, and the Baltic countries.

a. Advances in Research and in Lessons Learned

The ongoing Arctic Oil Spill Response Technology Joint Industry Programme (ART JIP) is a comprehensive research initiative bringing together the world's leading Arctic scientists and engineers. This program was initiated in 2012 as a collaboration of nine international oil and gas companies: BP, Chevron, ConocoPhillips, Eni, ExxonMobil, North Caspian Operating Company, Shell, Statoil, and Total. These companies have come together to further enhance industry knowledge and capabilities in the area of Arctic spill response as well as to increase understanding of potential impacts of oil on the Arctic marine environment. Such collaborative projects, in a noncompetitive technology arena wherein all stakeholders stand to gain from mutual advancement of capabilities, have been the hallmark of industry's oil spill response research.

In addition to substantial industry-sponsored research, there has been a long and effective research effort led by government organizations. For more than three decades, MMS/BSEE has funded programs for open water and in ice. The National Oceanic and Atmospheric Administration (NOAA) is involved in a variety of oil spill research projects in conjunction with academia and other agencies that includes development of an Arctic version of its oil spill trajectory model GNOME (General NOAA Operational Modeling Environment). The U.S. Environmental Protection Agency is conducting tests of dispersant efficacy and toxicity at low temperatures.

There is extensive knowledge on oil spill response and behavior in ice and cold water based on at least four decades of research. Industry and government agencies continue to put significant resources into technology enhancements through collaborative research that will further improve the operability and effectiveness of different response systems in ice. Defining and gaining acceptance of existing technology and technology enhancements requires integrating a diverse set of stakeholder groups, including Arctic community residents and regulators, into a collaborative effort to resolve uncertainties and agree in advance on the most effective oil spill response options for a given drilling program.

In addition, API objects to BSEE's proposal to combine oil spill response planning with plans relating to source control and containment equipment (SCCE). The information sought in proposed § 250.70 is best maintained in a separate plan for the SCCE equipment such as the capping stack, cap and flow system, containment dome, and other similar subsea and surface devices. The Oil Spill Response Plan (OSRP) may include a reference to the separate SCCE plan dealing with the capping stack, cap and flow system, etc., but the OSRP is already a large plan that is utilized and well understood by oil spill responders. BSEE's proposal that the two plans be combined will inject confusion for personnel executing the OSRP, creating an unacceptable safety risk.

b. The Importance of the Full Tool Kit of Oil Spill Response Alternatives

The overall goal of spill response is to control the source as quickly as possible, minimize the potential damage caused by an accidental release, and employ the most effective response tools for the incident. Promoting mutual understanding of the benefits, limitations, and trade-offs of different response tools would facilitate achieving this goal. Response options that are highly effective under certain conditions may be ineffective in others depending on spill size, location, oil type/weathering, and environmental conditions.

API strongly encourages development of an educated and more balanced perspective regarding the full range of available response techniques, including controlled burning and the application of chemical dispersants. The response community and the general public must be informed of the benefits, limitations and tradeoffs associated with these techniques, and be provided the information to understand that even under the best of conditions, one can never expect to recover or eliminate all of the oil spilled. API also supports development of Federal and state planning standards and regulations that address realistic operational and environmental constraints, as well as practical levels of response capability. The type and number of resources that can be maintained and operated safely and effectively for a given area, project, or facility should reflect a careful assessment of the most probable spill events that might occur, while recognizing that backup resources can be cascaded within a short period of time to support a more serious spill event.

Technology enhancements will continue to improve the operability and effectiveness of different response systems in ice. There nevertheless remains an ongoing challenge to share information on spill response capabilities in Arctic conditions with a diverse set of stakeholder groups, residents and regulators to gain acceptance that all response options, including burning and dispersants, need to be available for responders to use on short notice as the spill behavior and environmental conditions dictate. Ultimately, decisions to employ a particular strategy need to be contingent on demonstrating a positive net environmental benefit.

10. API Urges BSEE to Leave Key Operational Decision making in the Hands of Individual Operators to Maximize Operations Integrity

A consistent theme noted in the proposed regulations is for BSEE to take an increased role in day to day operations and critical decision making processes. Some specific examples include:

- 250.188 regarding immediate oral reporting of *even potential* ice management activities
- 250.452 regarding real time monitoring requirements, onshore command centers and BSEE access
- 250.471(h) You must deploy and use SCCE when directed by the Regional Supervisor
- 250.472 "... the Regional Supervisor may direct you to drill a relief well...."
- 254.90 (c) "... the Regional Supervisor may direct you to deploy and operate your spill response equipment and/or your capping..... as part of announced or unannounced exercises...."

Shifting operational decision making away from Operators and their rig site personnel exposes the operations to increased risk levels. During any given operation the onsite personnel have the best understanding and most complete picture of the current operation, key risks and critical considerations. In addition, their experience in active operations provides them with the judgment to make effective real-time decisions within the bounds specified by the Operators governing procedures and operations integrity guidelines. This responsibility includes full control of the operations and the full authority to stop activities at any time.

As a general rule, Operators that use shore-based operations centers do so to assist personnel on the rig with monitoring of specific functions of the drilling operation, not to assume control of operational activities. Furthermore, Operators should have the flexibility to develop a performance-based approach (rather than follow a prescriptive requirement) described in their EP or Authorization for Permission to Drill (APD) describing what functions of these systems will be monitored in the wells(s), which will vary with the rig used and the equipment on board the rig, as well as the location of any support facilities ashore. It should be clear to BSEE that it remains the primary responsibility of the rig personnel to monitor information from drilling operations on a 24/7 basis and to take appropriate actions without waiting for direction from a remote shore base. Utilizing real-time data centers and shorebase decisionmaking may lead to a decrease in offshore personnel's responsibility and accountability which is critical to maintaining safe operations and responding to emergency situations. In times of communication interruptions or significant offshore events (well control, station keeping difficulties, vessel collisions, equipment failure, etc) there is generally insufficient time to interact with shorebase command centers to plan a response. It is these critical moments that offshore supervision is key and its effectiveness can only be maintained if the primary decisionmaking remain focused at location. To ensure offshore personnel are equipped with the necessary knowledge prior to specific operations, a range of preparatory engagements are held with the shorebase engineering and operations support teams or through on-site engineering assistance. In these engagements, the key risks and critical steps are discussed to prepare the offshore team for the upcoming operations, including discussion of potential risks and appropriate responses. This approach should be maintained for all active drilling operations.

In situations where an escalation of response is required, such as mobilizing Source Control and Containment Equipment or commencing relief well operations, the Operator is in the best position to select the appropriate next steps due to their understanding of the overall operational situation and available resources. In obtaining permits for Arctic operations the Operator will be required to submit a number of documents to address how they intend on responding to a variety of emergency scenarios. These documents provide BSEE and other regulatory bodies the ability to direct the ultimate response to ensure the necessary SSH&E standards are met while leaving the actual implementation to the expertise of the Operator and their identified sub-contractors.

The proposed BSEE rules seek to incorporate a number of reporting requirements associated with ice monitoring that due to the dynamic and variable nature of ice movements in the Arctic will likely result in frequent interactions with BSEE. Each offshore Arctic drill site has unique ice and metocean conditions, and the rigs selected to drill will vary in their ability to interact with ice and maintain operations in those environments. For effective interactions on ice monitoring and management, BSEE would need to be fully engaged in and familiar with the particular ice management procedure for the well, risk assessments, training and execution preparations in order to be prepared to fully engage. To meet the intent of the proposed rule it is recommended that the requirement focus on the need for Operators to specify in advance the reporting requirements based on the assessed risks associated with the specific well and location. These guidelines could be incorporated into Operator's Ice Management Plan which would be reviewed and approved as part of the regulatory permitting process.

The proposed BSEE rules require reporting of kicks or unplanned events that could compromise well control. It is critical that regulations seek to maintain focus on prevention and, if necessary, responding to the situation on site. Requirements for immediate oral reporting to BSEE outlined in the proposed rules is vague and needs to be clarified. Immediate engagement with BSEE will be of limited value as the overall situation assessment will still be underway. In the circumstances described in this provision, the operator's sole focus should be on making conditions safe at the well site, yet this provision seems to take the focus away from operators taking the actions necessary to ensure safety, instead putting an emphasis on immediate engagement with the regulator through reporting. As the Operator will be responsible for immediate response, it is recommended that no additional reporting regulations are adopted incremental to the existing OCS requirements.

Furthermore, BSEE's stated desire for immediate reporting implies that the agency believes that kick control is the responsibility of the regulator. API requests clarification that BSEE is not suggesting that the agency is going to direct well control activities beginning with any unexpected kick. There are circumstances, when drilling into a formation that a change of pressure is predicted, or a thin small zone that is charged, that a kick could be taken and it would be considered a normal part of the exploration drilling activity, but under the language used in the proposed regulation could be considered a "potential well control incident". Premature regulator intervention would increase confusion and any existing risks pertaining to the status of the well under such circumstances. Inclusion of information about kick occurrences in existing regularly submitted well activity reports (daily and weekly) will fully satisfy the need for the regulator to have better information.

With respect to proposed §254.90 (c), if adopted, this section must acknowledge the jurisdiction of the U.S. Coast Guard over marine oil spill response preparedness and operations, as well as well containment operations that may be carried out in connection with response to a spill. Under the National Contingency Plan, in the event of a spill from an offshore drilling operation, federal on-scene command established for any such incident will be led by a representative of the U.S. Coast Guard.

Additionally, API requests that BSEE remove the annual auditing requirements set forth in proposed §250.1920(b)(5). BSEE has not provided any justification for this increased frequency which will not have an effect on safety or compliance since the SEMS program does not change on an annual basis. Existing BSEE regulations require an audit of the SEMS program on a three-year cycle which has worked effectively for operations in the Gulf of Mexico and should be more than adequate for operations in the Alaska OCS.

With all decisions related to active offshore operations there is a certain level of risk, responsibility and accountability. In the event BSEE seeks to direct active drilling operations, further clarification is required on the associated responsibility, accountability and liability that would be assumed in the event of any incidents that occur as a direct result of those actions. It is for these reasons we urge BSEE to leave key operational decisionmaking in the hands of the Operators and focus the regulations on ensuring that drilling plans and operations are risk based, and fit for purpose for every proposed location.

11. API Urges Delaying the Release of the Proposed Arctic Rules until the Recently Proposed BOP and Well Control Rules Have been Finalized

On April 13, 2015, proposed new rules were issued by BSEE for all OCS areas that are focus on Blowout Preventer Systems and Well Control. The proposed rules significantly alter the current regulations in both content and structure and overlap in numerous areas with the proposed Arctic OCS rules. The heightened requirements that will result with the final publication of the BOP and Well Control rules will impact considerations for the Arctic OCS rules. Because of this, API requests that the comment period of the Arctic OCS rules be re-opened after the BOP and Well Control final rules are published. This will ensure all parties fully understand the base regulatory regime for OCS areas and enable more informed decisions to be made regarding incremental Arctic OCS requirements.

Thank you for considering these comments. If you have any questions, please do not hesitate to contact the undersigned.

Very truly yours,

A handwritten signature in black ink that reads "Richard Ranger". The signature is written in a cursive style with a large initial "R".

Richard Ranger
Senior Policy Advisor
American Petroleum Institute

cc: Secretary of Interior Sally Jewell
Director Abigail Ross Harper, Bureau of Ocean Energy Management
Director Brian Salerno, Bureau of Safety and Environmental Enforcement



Via email & www.regulations.gov

June 20, 2016

Mr. Peter Meffert
Office of Policy, Regulation, and Analysis
Bureau of Ocean Energy Management
U.S. Department of the Interior
45600 Woodland Road
Sterling, VA 20166

**Re: Joint Trades Comments
Air Quality Control, Reporting and Compliance; Proposed Rules
81 Federal Register 19718 (April 5, 2016)
Docket Id: BOEM-2013-0081**

Mr. Meffert,

The American Petroleum Institute (API), the Offshore Operators Committee (OOC), the National Ocean Industries Association (NOIA), the Independent Petroleum Association of America (IPAA), the International Association of Drilling Contractors (IADC), and the Offshore Marine Services Association (OMSA) – hereinafter referred to as “the Joint Trades” - respectfully submit the attached comments on the Bureau of Ocean Energy Management’s (BOEM), proposed rule *Air Quality Control, Reporting and Compliance*, 81 Federal Register 19718 (April 5, 2016), Docket Id: BOEM-2013-0081.

The Joint Trades represent energy companies who conduct the vast majority of the Outer Continental Shelf (OCS) oil and natural gas exploration and production activities in the United States. Additionally, many of our associations’ members are involved in drilling, equipment manufacturing, construction, and support services for the offshore oil and natural gas industry, and all will be adversely impacted by this BOEM rulemaking.

Our members recognize that offshore operations must be conducted safely and in a manner that protects the environment. The U.S. offshore industry has advanced the energy security of our nation, and contributed significantly to our nation’s economy. Our goal is for operations integrity and fit-for-risk designs, and we are concerned that many of the requirements in the proposed rule will have no beneficial impact on air quality while adding unnecessary financial and data collection burden to the industry. In addition, we are concerned that the proposed rule could materially impair the ability to maintain current production operations, reduce future development and production, or result in taking of leases and stranding of valuable reserves, all of which could lead to reduced royalties as well as lower sales, income, and ad valorem tax payments by the industry. To avoid these negative consequences, it is imperative that BOEM and industry collaborate to develop rules that are more workable and effective.

Our comments are submitted without prejudice to any of our member companies' right to have or express different or opposing views. We have encouraged all of our members to submit comments on the proposal.

In developing this response, industry drew on the expertise of our member companies and environmental consultants that resulted in thousands of man hours of effort. Industry is providing this technically-based set of comments to aid BOEM in its efforts to create a robust and effective air quality rule. As stated in our earlier comment letters, we believe additional time to review and comment on this lengthy and complex rulemaking was needed and, had it been provided, would have further contributed to the proposal's effectiveness. Indeed, additional time to review and comment on this complicated and lengthy rulemaking is warranted to provide the public an adequate opportunity to participate as required under the Administrative Procedure Act. Going forward substantial industry-regulator engagement is imperative to generate and implement a workable and effective rule.

This letter highlights some of the proposed requirements that will have the greatest impact on industry, but there are numerous other specific proposed requirements that will also have significant impacts. The enclosed attachments include detailed information on how we believe these proposed regulations will significantly impact industry, and offer recommendations for clarifying the proposed rule language.

Significant issues with the greatest impact are highlighted below:

1. BOEM Has Not Demonstrated That Revised Rules Are Needed

Issue – Executive Order 12866 requires “Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.” In the proposed rule, BOEM has not identified a problem that must be addressed.

The Outer Continental Shelf Lands Act (OCSLA) authorizes the Secretary of the Interior to promulgate regulations for compliance with the National Ambient Air Quality Standards (NAAQS) to the extent that activities authorized under OCSLA significantly affect the air quality of any state. BOEM's existing air quality regulatory program (AQRP) has worked successfully for more than 30 years to fulfill this narrow mandate.

Alaska and Gulf of Mexico coastal state air quality plans (State Implementation Plans) and conclusions from dozens of BOEM's own analyses indicate that OCS sources do not have a significant effect on onshore air quality. Given that BOEM already has practices in place to ensure compliance with recent air quality standards (such as the 1-hour NO₂ standard) and that BOEM has not demonstrated OCS sources significantly affect the air quality of any state, there is no reasonable justification for an expansive new regulation that brings with it significant cost implications to the industry.

Recommendation – BOEM should not proceed with the expansive overhaul of the air quality regulatory program until there is a demonstration that OCS sources significantly affect onshore air quality and jeopardize compliance with the NAAQS.

2. Ongoing Regional Air Quality Studies Should Be Completed to Inform the Rule

Issue – BOEM has initiated multi-year, multimillion-dollar air quality studies designed to determine whether OCS emissions significantly affect onshore air quality in Alaska and in the Gulf coast states and, if necessary, to determine whether changes in emissions exemption thresholds are warranted. These studies will also conduct regional photochemical modeling to determine the extent to which precursor pollutants

affect onshore ozone and PM_{2.5} concentrations. Given that the existing regulatory program is operating effectively, as evidenced by BOEM's own studies and state SIPs that show that OCS sources do not have a significant effect on onshore air quality, there is no reason to revise emissions exemption thresholds that determine when additional modeling and expensive emission reduction measures are required.

Recommendation – BOEM should not proceed with the development of any new emission exemption thresholds or modeling requirements unless the air quality studies are completed and demonstrate a need for revisions.

3. BOEM is Not Authorized to Regulate Emissions from Mobile Support Craft

Issue - The proposed rule would require operator plans to include extensive information about support vessels (referred to as Mobile Support Craft or “MSC”), and vessel emissions would be included in the exemption determination and in modeling analyses. The proposed rule is not clear if emission sources on support vessels would be subject to emission reduction measures (ERM).

BOEM cannot consider MSC emissions when determining whether OCS activities significantly affect the air quality of a state because MSCs are not activities authorized under OCSLA. BOEM does not authorize mobile vessels, and OCSLA explicitly excludes vessels from the Secretary's legal purview. BOEM may only regulate vessels when they cease to be vessels and instead become, or become part of, an “artificial island,” “installation” or “device” that is “permanently or temporarily attached to the seabed for the purpose of exploring for, developing, or producing” oil, gas or sulphur from the OCS. (See 43 U.S.C. § 1333(a)). Unlike vessels, BOEM authorizes these structures and devices, and may subject them (and only them) to its air quality regulations under section 5(a)(8) of OCSLA.

Aside from legal constraints, there are numerous practical considerations that preclude effective regulation of vessel emissions. For example, the proposed rule requires detailed information regarding the support vessels, including engine data, tank capacities, travel routes, emission factors, and short-term and long-term emissions. The designated operator of an OCS facility is likely to contract with another entity for support vessel services. At the time of plan submittal, neither the contractor nor the designated operator will know with any certainty what vessel will be used let alone any of the detailed information the rule requires.

Furthermore, there are already well understood, comprehensive, and effective national and international programs in place that regulate vessel emissions. Analogous to national EPA programs that establish motor vehicle emission standards, MARPOL Annex VI establishes emissions standards that apply to U.S. and foreign vessels of any type (including mobile offshore drilling units, floating drilling rigs, and other vessels) operating within the North American Emission Control Area (ECA). With the International Maritime Organization (IMO) programs in place, the gradual replacement of engines and ships will reduce emissions without additional regulation by BOEM. In addition, EPA establishes standards for marine engines for U.S. registered or flagged vessels. Just as the national motor vehicles emissions programs preempt permitting under new source review for onshore industrial facilities, MARPOL and EPA emissions requirements should preempt permitting of vessels associated with OCS projects. The recent IMO designation of the North American coastal waters as an ECA has significantly reduced the sulphur level of the fuel consumed by vessels transiting the OCS, both those supporting energy production and those in other usage.

Recommendation – BOEM should eliminate all provisions related to accounting for or regulating emissions from MSC.

4. BOEM’s Proposed Consolidation of Facility Emissions is Unnecessary and Unjustified

Issue - The proposed rule modifies the current definition of “facility” in the regulations. In addition, BOEM proposes to add several definitions to the rule, including “complex total emissions,” “proximate activities,” “projected emissions,” and “attributed emissions.” Through these definitions, BOEM would not only treat as one source of regulated emissions activities that had previously been treated as separate, but also would require groups of separate facilities on separate leases to be evaluated together and comply with the regulations jointly simply because they may share a common owner or operator.

There are a number of legal and practical challenges to consolidating emissions from existing facilities with those from a facility submitting a new or modified plan. These include due process issues, the protection of sensitive, proprietary, or confidential operational information, and the need for clear criteria that can be consistently applied to determine which existing facilities are to be consolidated with a new facility. As a further complication, emissions from vessels supporting the consolidated facilities must also be identified and included in the analyses. Virtually no details on how consolidation is to be accomplished have been presented in the proposed rule.

The purported justification for consolidation is to ensure applicants do not segment plans so emissions are less than thresholds that require modeling and ERM requirements. However, we believe the existing air quality program has safeguards to ensure that cumulative impacts from proximate facilities are regulated when necessary, and offer additional comment on when a cumulative analysis may be required.

Recommendation – The proposed requirement to consolidate existing facilities with a proposed facility should not be adopted because it exceeds BOEM’s authority under OCSLA. Instead, BOEM should adopt the definition of “facility” recommended in our attached comments, which more closely adheres to the scope of BOEM’s statutory authority under section 5(a)(8) of OCSLA. BOEM should abandon the notion of aggregating emissions across multiple, proximate facilities simply because they share a common record title owner or operator.

5. Recertification of Existing Facilities is Unnecessary

Issue - Proposed section 550.310(c) would require lessees to re-submit previously approved plans at least every 10 years to verify compliance with BOEM’s current air quality regulations, including those provisions relating to new information gathering and reporting requirements.

The requirement to re-submit plans every 10 years is inconsistent with section 25(h)(3) of OCSLA, which indicates that BOEM can only review an existing plan “based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan.” BOEM lacks the authority to require re-submission or revision of an already-approved plan, absent some indication of changed conditions or impacts. It follows, therefore, that BOEM may not promulgate a regulation imposing a blanket requirement that all operators periodically re-submit their plans for review unless there is a specific reason showing that each re-submitted plan warrants review because there have been changed conditions or impacts. Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone cannot possibly constitute grounds for re-submission and re-approval, on new and far more onerous terms, of existing DPPs and DOCDs. Accordingly, BOEM may not require re-submission and re-approval of existing plans.

Furthermore, BOEM's existing procedures assure continued compliance with NAAQS. When new facilities are proposed, facilities whose emissions exceed exemption thresholds are required to demonstrate compliance with the NAAQS by adding model-predicted pollutant concentrations (due to facility emissions) to background concentrations. The background concentrations include contributions from existing OCS sources, however small, so BOEM can be assured that existing facilities do not contribute to violations of the NAAQS. Second, current section 550.303(j) authorizes the Regional Supervisor to require submittal of additional information when they judge an individual facility alone or in combination with others may significantly affect the air quality of an onshore area.

Recommendation - BOEM should not require resubmission and additional approval of existing plans.

6. BOEM's Emission Reduction Credit Program is Not Fully Developed and the IRIA Underestimates the Cost of Credits

Issue - The proposed regulation allows the use of emissions credits as a component of emission reduction measures (ERM). In concept, the flexibility to be able to use emissions credits for ERM purposes would be beneficial to OCS facilities. However, the practical application of emissions credits programs requires establishing basic principles as part of the implementing regulation. A number of fundamental components of an effective emissions reduction credit (ERC) program are missing from the proposed rule, rendering the proposal incomplete.

Furthermore, the average cost that BOEM's IRIA assumes for emissions credits does not reflect recent costs for emission reduction credits in ozone nonattainment areas near the Gulf of Mexico, and ERC costs in these areas could rise. The EPA lowered the 8-hour ozone NAAQS from 75 ppb to 70 ppb in October 2015 and certain areas along the Gulf of Mexico coast are expected to continue their status as nonattainment areas. This means the demand for onshore NO_x and VOC emission reduction credits in this region will likely continue, and BOEM's proposed regulation could create additional demand. Because of this increased demand, we believe the availability of ERCs is questionable and that the ERC cost analysis performed by BOEM considerably underestimates the cost of this emission reduction concept.

Although there may be value in an emission reduction program for facilities in the Gulf of Mexico when BOEM's regulatory framework is developed, there is no emission reduction credit program in Alaska. Consequently, BOEM cannot rely on ERCs as cost effective ERM options for Beaufort and Chukchi sea facilities. The regulatory impact analysis should be updated accordingly.

Recommendation – BOEM must further develop the emission reduction credit concept and include the additional program elements in a re-proposed rule.

7. BOEM Must Maintain the Point of NAAQS Compliance at Onshore Locations

Issue - The proposed rule would relocate the point of compliance from the state shoreline to the seaward edge of the state seaward boundary. The point of compliance is an important component of the AQRP as it is used to determine exemptions from detailed air quality analyses, the significance of air impacts, whether emissions cause or contribute to a violation of the NAAQS, and the need for ERM. (See 81 Fed. Reg. at 19738-19740, 19794). Although a state's territory extends to its seaward boundary, this is not the appropriate point at which to assess air-quality impacts for a number of reasons.

First, as discussed, under section 5(a)(8) the Secretary’s authority is limited to promulgating regulations for “compliance with the [NAAQS] pursuant to the [CAA] to the extent that activities authorized under [OCSLA] significantly affect the air quality of any State.” Under the relevant state implementation plans, the border of the air quality control regions appears to extend only to the shoreline and not to the respective states’ territorial waters. As such, NAAQS do not apply in the territorial waters.

Second, when enacting section 5(a)(8), Congress clearly was concerned only with impacts to onshore air quality. For example, the legislative history states:

The conferees intent was that...regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area. 1978 U.S.C.C.A.N. at 1684-1685.

Third, BOEM itself recently acknowledged that because the NAAQS are intended to protect human health, BOEM is only concerned with the onshore impacts of OCS activities. (See BOEM 2017-2022 Draft Multisale EIS at xvii (“Since the primary NAAQS are designed to protect human health, BOEM focuses on the impact of these activities on the States, where there are permanent human populations”)).

Finally, BOEM’s proposal to use the seaward boundary to assess air quality impacts of OCS activities is arbitrary because the geographic extent of states’ territorial waters is not uniform. Some state seaward boundaries extend three miles from shore, others nine miles from shore.

We also note practical considerations that argue against this change. As BOEM acknowledges in the preamble, there are no ambient air quality monitoring stations offshore, so there is no way to determine background concentrations to represent current air quality. Use of onshore data would likely overstate offshore background concentrations by very large margins.

Recommendation - The point at which OCS air impacts are assessed must be the shoreline and not the state seaward boundary.

8. The Costs of the Proposed Rule Outweigh the Benefits

Issue - BOEM’s Initial Regulatory Impact Analysis (IRIA) estimates that the ten-year net present value of the proposed regulation is negative \$97 million using a discount rate of three percent - which indicates that the cost of the regulation will exceed the benefit. This represents a government policy that is doing more harm than good.

The current BOEM cost benefits analysis overlooked, or did not quantify many costs, such as the costs of installation and maintenance of emission reduction measures, the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NOx emissions, and the cost to modify MSCs to provide the proposed fuel consumption and engine operational data. Our consultant surveyed OCS operators and vendors for historical cost information, and considering just some of the additional costs of the proposed rule, we estimate a total 10 year cost of more than \$3.4 billion, more than 10 times BOEM’s estimate.

Recommendation – BOEM must consider all the costs of the proposed rule and provide a more accurate Regulatory Impact Assessment. Although the IRIA demonstrated costs outweigh benefits, improving the quality and scope of the analysis will confirm the proposed rule is not justified.

9. BOEM’s Proposed Rule is Incomplete

Issue - In many instances the provisions of the proposed rule appear to be incomplete or premature. BOEM has specifically solicited comments in the preamble on approximately forty issues in the proposed rule that have not been fully developed, defined or concretely proposed. Many of the issues that are undeveloped would be critical components of any final air quality regulatory program, and may have significant impact to offshore operators. Without fully developed proposals on these issues, industry does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. Constructive feedback on many, if not most, of these requests involves detailed technical review and significant information gathering. Due to the compressed comment period, we were not afforded enough time to give these requests the full consideration and/or the technical analysis they warrant. Furthermore, there are many instances where BOEM’s intent described in the preamble does not align with the proposed rule as written.

Recommendation - BOEM must publish a revised proposed rule that addresses the approximately forty issues for which it has solicited comment and which contains proposed rule text consistent with the preamble discussion. The revised proposed rule must address the critical components with sufficient specificity to facilitate meaningful stakeholder comment. To do otherwise would violate the Administrative Procedure Act.

Summary

We believe the expansive rule revision BOEM proposes is unnecessary and many of the provisions are beyond the scope of BOEM’s existing statutory authority over OCS air emissions. There are many incomplete concepts in the proposed rule that must be developed after consideration of our comments and offered again for public review and comment.

BOEM has indicated the desire to finalize the proposed rule by December 2016. We are concerned that this artificial deadline will impede BOEM’s ability to adequately address stakeholder comments and develop a final rule that both protects the environment and does not hinder America’s energy renaissance, particularly when the agency has conceded there is no urgent issue for the proposed regulation to address. BOEM should take sufficient time between the close of the comment period and promulgation of any final rule to review and analyze all the submitted comments, make appropriate revisions, and complete the necessary internal and interagency reviews.

If you have any questions, or require clarification, on any of the comments provided here by the Joint Trades, please contact either Cathe Kalisz at kaliszc@api.org or Greg Southworth at greg@offshoreoperators.com

We appreciate the opportunity to provide these comments, and look forward to further discussions to resolve the significant issues associated with the proposed rule.

Yours truly,



Erik Milito
Group Director
Upstream & Industry Operations
American Petroleum Institute



Randall Luhti
President
National Ocean Industries Association



Greg Southworth
Associate Director
Offshore Operators Committee



Daniel Naatz
Sr. VP of Government Relations & Political Affairs
Independent Petroleum Association of America



Richard Wells
Vice-President
Offshore Marine Services Association



Alan Spackman
VP – Policy, Government & Regulatory Affairs
International Association of Drilling Contractors

Attachments

cc with Attachments:

Abigail Hopper, Director, Bureau of Ocean Energy Management
Walter Cruickshank, Deputy Director, Bureau of Ocean Energy Management

Comments on the Proposed Rulemaking – 30 CFR Part 550 Air Quality Control, Reporting, and Compliance; Proposed Rules

June 20, 2016

Docket ID No. BOEM-2013-0081

American Petroleum Institute (API)
Offshore Operators Committee (OOC)
National Ocean Industries Association (NOIA)
Independent Petroleum Association of America (IPAA)
International Association of Drilling Contractors (IADC)
Offshore Marine Services Association (OMSA)

EXECUTIVE SUMMARY

The Outer Continental Shelf (OCS) regulated community has numerous concerns with the Bureau of Ocean and Energy Management's (BOEM's) proposed revisions to its air quality regulatory program (30 CFR Part 550 – Air Quality Control, Reporting, and Compliance). Our primary concern is that BOEM's proposed changes exceed the limited scope of BOEM's authority to regulate emissions under section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1334(a)(8). Under this section BOEM may regulate the emissions of activities it authorizes only if those authorized activities have a significant effect on the air quality of a state that threatens attainment or ongoing compliance with the National Ambient Air Quality Standards (NAAQS) in that state.

We believe the issues we address in our comments are sufficient to warrant withdrawal of this proposed rule. A new rule addressing the numerous deficiencies should not be re-proposed in advance of ongoing multi-year, multi-million dollar air quality studies designed, in part, to inform this rulemaking.

All previous environmental studies and assessments conducted by BOEM and others have concluded that emissions from OCS sources are not significantly impacting the air quality of any state. The new, ongoing studies will either confirm previous assessments, or, if they determine that there are significant air quality impacts, will help inform which pollutants may be of concern, which modeling tools are needed, and how exemption thresholds should be developed. In either case, BOEM should not proceed with any rulemaking until the studies are completed.

The proposed rule also includes several proposed requirements that are unjustified because they exceed BOEM's regulatory authority under the OCSLA, are not practically or administratively feasible, or provide little or no environmental benefit. Additionally, and as importantly, some critical rule provisions are not fully developed and incomplete as to preclude meaningful evaluation of impacts on OCS entities.

Listed below are our primary concerns with the proposed rule. To facilitate review of our comments, we have summarized the concern and provided a recommendation with a reference to the detailed comments for additional supporting discussion.

BOEM Has Not Demonstrated a Need for the Rule Revisions

Executive Order 12866 requires “Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.” BOEM has not identified a problem that must be addressed.

OCSLA authorizes the Secretary of the Department of Interior (Interior) to promulgate regulations for compliance with the NAAQS to the extent that activities authorized under OCSLA significantly affect the air quality of any state. BOEM's current Air Quality Regulatory Program (AQRP) has worked successfully for more than 30 years to fulfill this narrow mandate.

The only justification BOEM offers for this accelerated rulemaking is that “Waiting to publish these regulatory changes until 2018 or 2019, when both the Alaska and Gulf of Mexico exemption threshold studies are completed, would make it more difficult to ensure that BOEM meets its statutory duties.”¹

Alaska and Gulf of Mexico coastal state air quality plans (State Implementation Plans) and conclusions from dozens of BOEM’s own analyses indicate that OCS sources do not have a significant effect on onshore air quality. Given that BOEM already has practices in place to ensure compliance with recent air quality standards (such as the 1-hour NO₂ standard) and that BOEM has not demonstrated OCS sources significantly affect the air quality of any state, there is no justification for an expansive new regulation with huge cost implications.

Recommendation – BOEM should not proceed with the expansive overhaul of the AQRP until there is a demonstration that OCS sources significantly affect onshore air quality and jeopardize compliance with the NAAQS.

Refer to Sections 1.1, and 2.3 for detailed comments on this matter.

Regional Air Quality Studies Now Underway Are Needed to Inform the Rule

BOEM is in the midst of multi-year, multi-million dollar air quality studies designed to determine whether OCS source emissions significantly affect onshore air quality in Alaska and in the Gulf coast states and, if necessary, to determine whether changes in emissions exemption thresholds (EETs) are warranted. These studies will also conduct regional photochemical modeling to determine the extent to which precursor pollutants affect onshore ozone and particulate matter less than or equal to 2.5 micrometers in diameter (PM_{2.5}) concentrations. Given that the existing regulatory program is operating effectively, as evidenced by BOEM’s own studies and by State Implementation Plans (SIPs) that show that OCS sources do not have a significant effect on onshore air quality, there is no justification to revise EETs that determine when additional modeling and expensive emission reduction measures (ERMs) are required.

Recommendation – BOEM should not proceed with the development of any new EETs or modeling requirements unless the air quality studies demonstrate a need and inform decisions regarding appropriate exemption thresholds.

Refer to sections 2.4 and 8.2 for detailed comments on this matter.

BOEM is Not Authorized to Regulate Emissions from Mobile Support Craft

The proposed rule revisions would require submitted plans to include extensive information about support vessels (referred to as Mobile Support Craft or MSC) and vessel emissions would be included in the exemption determination and in modeling analyses. It is not clear if emission sources on support vessels would be subject to ERM.

¹ Air Quality Control, Reporting, and Compliance, Initial Regulatory Impact Analysis, RIN: 1010-AD82, page 64.

BOEM cannot consider MSC emissions when determining whether activities it authorizes significantly affect the air quality of a state because MSC are not “activities authorized” under OCSLA. BOEM does not authorize mobile sources, and OCSLA explicitly excludes vessels from the Secretary’s legal purview. BOEM may only regulate vessels when they cease to be vessels and instead become or become part of an “artificial island,” “installation” or “device” that is “permanently or temporarily attached to the seabed for the purpose of exploring for, developing, or producing” oil, gas or sulphur from the OCS. See 43 U.S.C. § 1333(a). Unlike vessels, BOEM authorizes these structures and devices, and may subject them (and only them) to its air quality regulations under section 5(a)(8) of OCSLA.

Aside from legal constraints, there are numerous practical considerations that preclude effective regulation of vessel emissions. For example, the proposed rule requires detailed information regarding MSC, including engine data, tank capacities, travel routes, emission factors, and short-term and long-term emissions. The designated operator of an OCS facility is likely to contract with another entity for support vessel services. At the time of plan submittal, neither the contractor nor the designated operator is likely to know with any certainty what vessel will be used, let alone any of the detailed information the rule requires.

Furthermore, there are already programs in place that regulate vessel emissions. Analogous to national Environmental Protection Agency (EPA) programs that establish motor vehicle emission standards, Annex VI to the International Convention on the Prevention of Pollution from Ships (MARPOL Annex VI) establishes emissions standards that apply to US and foreign vessels of any type (including Mobile Offshore Drilling Units (MODUs), floating drilling rigs, and other platforms) operating within the North American Emission Control Area (ECA). With the International Maritime Organization (IMO) programs in place, the gradual replacement of engines and ships will reduce emissions without additional regulation by BOEM. In addition, EPA establishes standards for marine engines for US registered or flagged vessels. Just as the national motor vehicles emissions programs preempt permitting under new source review for industrial facilities onshore, MARPOL and EPA emissions requirements should preempt permitting of vessels associated with OCS facilities.

Recommendation – BOEM should eliminate all provisions related to accounting for or regulating emissions from MSC.

Refer to Section 1.2.4 and Chapter 3 for detailed comments on this matter.

BOEM’s Proposed Consolidation of Facility Emissions is Unnecessary and Unjustified

The proposed rule modifies the current definition of “facility” in the regulations. In addition, BOEM proposes to add several definitions to the rule, including “complex total emissions,” “proximate activities,” “projected emissions,” and “attributed emissions.” Through these definitions, BOEM would not only treat as one source of regulated emissions activities that had previously been treated as separate, but also would require groups of separate facilities on separate leases to be evaluated together and to comply with the regulations jointly simply because they may share a common owner or operator. If EETs are exceeded based on the emissions of any facility or the combined facilities, the impacts would need to be addressed for either an existing facility undergoing a plan resubmission or for a new plan to go forward.

There are a number of legal and practical challenges to consolidating existing facility emissions with those from a facility submitting a new or modified plan. These include due process issues, the protection of sensitive, proprietary, or confidential operational information, and the need for clear criteria that can consistently be applied to determine which existing facilities are to be consolidated with a new facility. As a further complication, emissions from vessels supporting the consolidated facilities must also be identified and included in the analyses. Virtually no details on how consolidation is to be accomplished have been presented in the proposed rule.

The purported justification for consolidation is to ensure applicants do not segment plans so emissions are less than thresholds that require modeling and ERM requirements. However, we believe the existing air quality program has safeguards to ensure that cumulative impacts from proximate facilities are regulated when necessary, and offer additional comment on when a cumulative analysis may be required.

Recommendation – The proposed requirement to consolidate existing facilities with a proposed facility (§ 550.303(d)) should not be adopted because it exceeds BOEM's authority under OCSLA. Instead, BOEM should adopt the definition of "facility" recommended in our comments, which more closely adheres to the scope of BOEM's statutory authority under section 5(a)(8) of OCSLA. BOEM should abandon the notion of aggregating emissions across multiple, proximate facilities simply because they share a common record title owner or operator.

Refer to Section 1.4 and chapters 4 and 5 for detailed comments on this matter.

The Costs of the Proposed Rule Outweigh the Benefits

BOEM's Initial Regulatory Impact Analysis (IRIA) estimates that the ten year net present value of the proposed regulation is negative \$97 million using a discount rate of three percent, which indicates that the cost of the regulation will exceed the benefit. This represents a government policy that is doing more harm than good.

The current BOEM cost benefits analysis overlooked or did not quantify many costs, such as the costs of installation and maintenance of ERM, and the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NO_x emissions. Our consultant surveyed OCS operators and vendors for historical cost information and considering just some of the additional costs of the proposed rule, we estimate a total 10 year cost of more than \$3.4 billion, more than 10 times BOEM's estimate.

Recommendation – BOEM must consider all the costs of the proposed rule and provide a more accurate Regulatory Impact Assessment (RIA). Although the IRIA demonstrated costs outweigh benefits, improving the quality and scope of the analysis will confirm the proposed rule is not justified.

Refer to Appendix B for detailed comments on BOEM's IRIA.

BOEM's Proposed Rule is Incomplete

In many instances the provisions of the proposed rule appear to be incomplete or premature. BOEM has specifically solicited comments in the preamble on approximately forty issues that have not been fully developed, defined, or concretely proposed. Many of the issues that are undeveloped would be critical components of any final air quality regulatory program, and may have significant impact to offshore operators. Without fully developed proposals on these issues, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. Furthermore, there are many instances where BOEM's intent described in the preamble does not align with the proposed rule as written.

Recommendation - BOEM must publish a revised proposed rule that addresses the approximately forty issues for which it has solicited comment and that resolves inconsistencies between the preamble and the text of the proposed rule. The revised proposed rule must address the critical components with sufficient specificity to facilitate meaningful stakeholder comment.

To do otherwise would violate the Administrative Procedure Act (APA).

Refer to sections 1.5.3, 2.5, 2.6, 7.1, 7.2, 8.6, 8.7, 11.1, and 12.4 for detailed comments on this matter.

Recertification of Existing Facilities is Unnecessary

Proposed § 550.310(c) would require lessees to resubmit previously approved plans at least every 10 years to verify compliance with BOEM's current air quality regulations, including those provisions relating to new information gathering and reporting requirements.

The requirement to resubmit plans every 10 years is inconsistent with section 25(h)(3) of OCSLA, which indicates that BOEM can only review an existing plan "based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan." BOEM lacks the authority to require resubmission or revision of an already-approved plan, absent some indication of changed conditions or impacts. It follows, therefore, that BOEM may not promulgate a regulation imposing a blanket requirement that all operators periodically resubmit their plans for review unless there is a specific reason showing that each resubmitted plan warrants review because there have been changed conditions or impacts. Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone cannot possibly constitute grounds for resubmission and re-approval, on new and far more onerous terms, of existing Development and Production Plans (DPPs) and Development Operations Coordination Documents (DOCDs).

Furthermore, BOEM's existing procedures assure continued compliance with NAAQS. When new facilities are proposed, facilities whose emissions exceed exemption thresholds are required to demonstrate compliance with the NAAQS by adding model-predicted pollutant concentrations attributable to facility emissions to background concentrations. The background

concentrations include contributions from existing OCS sources, however small, so BOEM can be assured that existing facilities do not contribute to violations of the NAAQS.

Recommendation: BOEM should not require resubmission and additional approval of existing plans.

Refer to sections 1.3.2 and 4.1, and Chapter 10 for detailed comments on this matter.

BOEM's Emission Reduction Credit Program is Not Fully Developed and the IRIA Underestimates the Cost of Credits

The proposed regulation allows the use of emissions credits as a component of ERM. In concept, the flexibility to be able to use emissions credits for ERM purposes would be beneficial to OCS facilities. However, the practical application of emissions credits programs requires establishing basic principles as part of the implementing regulation. A number of fundamental components of an effective ERC program are missing from the proposed rule, rendering the proposal incomplete.

Furthermore, the average cost that BOEM's IRIA assumes for emissions credits does not reflect recent costs for emission reduction credits in ozone nonattainment areas near the Gulf of Mexico, and ERC costs in these areas could rise.

The EPA lowered the 8-hour ozone NAAQS from 75 ppb to 70 ppb in October 2015, and certain areas along the Gulf of Mexico coast are expected to continue their status as nonattainment areas. This means the demand for onshore NO_x and VOC emission reduction credits in this region will likely continue, and BOEM's proposed regulation could create additional demand.

Because of this increased demand, we believe the availability of ERCs is questionable and that the ERC cost analysis performed by BOEM considerably underestimates the cost of this emission reduction concept.

Although there may be value in an emission reduction program for facilities in the Gulf of Mexico when BOEM's regulatory framework is developed, there is no emission reduction credit program in Alaska. Consequently, BOEM cannot rely on ERCs as cost effective ERM options for Beaufort and Chukchi sea facilities. The RIA should be updated accordingly.

Recommendation: Further develop the emission reduction credit concept and include the additional program elements in a re-proposed rule.

Refer to sections 7.1.1, 7.1.5, and 7.5 for detailed comments on this matter.

BOEM Must Maintain the Point of NAAQS Compliance at Onshore Locations

The proposed rule would relocate the point of compliance from the state shoreline to the seaward edge of the state seaward boundary. The point of compliance is an important component of the AQRP as it is used to determine exemptions from detailed air quality analyses, the significance of air impacts, whether emissions cause or contribute to a violation of the NAAQS, and the need for ERM. (See 81 Fed. Reg. at 19738-19740, 19794). Although a

state's territory extends to its seaward boundary, this is not the appropriate point at which to assess air-quality impacts for a number of reasons.

First, as discussed, under section 5(a)(8) the Secretary's authority is limited to promulgating regulations for "*compliance with the [NAAQS] pursuant to the [CAA] to the extent that activities authorized under [OC SLA] significantly affect the air quality of any State.*" (emphasis added). Under the relevant SIP, the border of the air quality control regions (AQCR) appears to extend only to the shoreline and not to the respective states' territorial waters. As such, NAAQS do not apply in the territorial waters.

Second, when enacting section 5(a)(8), Congress clearly was concerned only with impacts to *onshore* air quality. For example, the legislative history states:

The conferees intent was that...regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area.

1978 U.S.C.C.A.N. at 1684-1685.

Third, BOEM itself recently acknowledged that because the NAAQS are intended to protect human health, BOEM is only concerned with the onshore impacts of OCS activities. The BOEM 2017-2022 Draft Multisale Environmental Impact Statement (page xvii) states "Since the primary NAAQS are designed to protect human health, BOEM focuses on the impact of these activities on the States, where there are permanent human populations".

Finally, BOEM's proposal to use the seaward boundary to assess air quality impacts of OCS activities is arbitrary because the geographic extent of states' territorial waters is not uniform. Some state seaward boundaries extend three miles from shore, others nine miles from shore.

We also note practical considerations that argue against this change. As BOEM acknowledges in the preamble, there are no ambient air quality monitoring stations offshore, so there is no way to determine background concentrations to represent current air quality. Use of onshore data would likely overstate offshore background concentrations by very large margins.

Recommendation: The point at which OCS air impacts are assessed must be the shoreline and not the state seaward boundary.

Refer to sections 1.2.5, 8.4, and 8.6 for detailed comments on this matter.

Summary

We believe the expansive rule revision BOEM proposes is not necessary and many of the provisions are beyond the scope of BOEM's statutory authority over OCS air emissions. There are many incomplete concepts in the proposed rule that must be more fully developed after consideration of our comments and offered again for public review and comment.

BOEM has indicated the desire to finalize the proposed rule by December 2016. We are concerned that this artificial deadline will impede BOEM's ability to adequately address stakeholder comments and develop a final rule that both protects the environment and does not hinder America's energy renaissance, particularly when the agency has conceded there is no urgent issue for the proposed regulation to address. BOEM should take sufficient time between the close of the comment period and promulgation of any final rule to review and analyze all the submitted comments, make appropriate revisions, and complete the necessary internal and interagency reviews.

INTRODUCTION

BOEM has proposed revisions to 30 CFR 550, Subparts A, B, C, and J. These proposed revisions, referred to as BOEM's "Air Quality Control, Reporting and Compliance" rule, were published in the Federal Register on April 5, 2016. The proposed rule represents substantive changes to the existing regulatory framework, including the replacement of the current 30 CFR 550 Subpart C rule text in its entirety. The new rule would exponentially increase the requirements imposed on offshore operators and is not reasonable considering the minimal impact of OCS operations on onshore air quality.

As stated in our earlier comment letters, we believe additional time to review and comment on this lengthy and complex rulemaking was needed and, had it been provided, would have further contributed to the proposal's effectiveness. Indeed, additional time to review and comment on this complicated and lengthy rulemaking is warranted to provide the public an adequate opportunity to participate as required under the APA. Going forward, substantial industry-regulator engagement is imperative to generate and implement a workable and effective rule.

We offer the following comments on the proposed regulation. Comments provided in Chapter 1 address key legal issues raised by BOEM's proposed rule, and Chapters 2 through 13 address various technical and policy issues. We have provided suggested regulatory text revisions in redline-strikeout format in Appendix A. Appendix B presents our comments on BOEM's IRIA. Finally, Appendix C provides responses to each of BOEM's solicitations for comment. BOEM has specifically solicited comments on approximately forty issues in the proposed rule that have not been fully developed or defined. Many of the issues that are undeveloped are critical components of the air quality regulatory program, and may have significant impact to offshore operators. Constructive feedback on many, if not most, of these requests involves detailed technical review and significant information gathering. Due to the compressed comment period, we were not afforded enough time to give these requests the full consideration and/or the technical analysis they warrant.

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Appendices

Appendix A – Requested Changes to Proposed Rule

Appendix B – Comments on Initial Regulatory Impact Analysis

Appendix C – Responses to BOEM’s Specific Requests for Comment on Rule Provisions

1 Legal Analysis

1.1 BOEM has failed to demonstrate the need for sweeping new regulations.

The Bureau of Ocean Energy Management's (BOEM's) authority to regulate air emissions on the Outer Continental Shelf (OCS) is limited to section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1334(a)(8). Section 5(a)(8) authorizes the Secretary to promulgate regulations:

...for compliance with the [N]ational [A]mbient [A]ir [Q]uality [S]tandards [(NAAQS)] pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.), to the extent that activities authorized under [OCSLA] significantly affect the air quality of any State.

To date, despite the detailed information gathering and analytical requirements of BOEM's current regulations, the agency has *never* found that any OCS facility, individually or cumulatively, caused or contributed to a violation of the NAAQS.

Apart from the putative benefits of reducing emissions associated with offshore oil and gas activities, which, as discussed below, is beyond the scope of BOEM's statutory authority, BOEM has not provided any legally defensible justification for its expansive and complex regulatory proposal. To the contrary, BOEM has made clear that additional regulation of OCS emissions is unnecessary. Even the March 2016 Environmental Assessment accompanying this proposed rule concedes that the environmental impact of all the requirements of the proposal would be "minimal" because "on the whole...OCS operations have a minimal impact on the air quality onshore." Oil, Gas, and Sulphur Operations in the Outer Continental Shelf 30 CFR Part 550 – Proposed Subparts A, B, C and J, Environmental Assessment (March 2016) at 17.

BOEM's recent multisale Draft Environmental Impact Statement (EIS) for Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022 also demonstrates that emissions from offshore oil and gas facilities are, in BOEM's words, "minor." As recently as April 2016, BOEM explained in its Draft EIS that region-wide Lease Sale 249, which would offer approximately 92.3 million acres for sale, result in the installation of dozens of new facilities, and produce between 0.211-1.118 billion barrels of oil and 0.547-4.24 trillion cubic feet of gas, would not have any significant impact on onshore air quality, either individually or cumulatively with nine similar lease sales. In the EIS, BOEM concludes that the "air quality impacts of OCS oil and gas exploration, development and production, as well as the non-OCS oil- and gas-related activities sources" associated with the sales would be "minor." *Id.* at 4-12. This finding is consistent with the most recent analysis of the air impacts associated with OCS operations conducted by BOEM's predecessor, the Minerals Management Service (MMS), which similarly concluded that OCS activities had no significant impact on state air quality. See Gulf of Mexico Air Quality Study, Final Report (Aug. 1995), www.data.boem.gov/PI/PDFImages/ESPIS/3/3427.pdf.

BOEM is currently in the midst of conducting new OCS air quality studies. The agency is clearly acting prematurely by proposing to finalize the proposed rule before the studies are complete. It is simply unclear why BOEM believes the information it currently has regarding the absence of onshore air quality impacts urgently compels more stringent regulation. At a minimum, because

BOEM's rush to regulation is completely unsupported by any evidence whatsoever that a problem even exists, its proposal to impose an expensive, administratively burdensome, and potentially disruptive suite of new regulations on OCS lessees and operators is arbitrary, capricious, and an abuse of discretion.

BOEM should not rush to promulgate regulatory requirements that BOEM itself acknowledges are unnecessary, and should at least postpone this rulemaking effort until the current OCS air quality studies are completed and the results are made publicly available.

1.2 Section 5(a)(8) of the Outer Continental Shelf Lands Act represents the full extent of BOEM's authority to regulate OCS air emissions.

BOEM's authority to regulate air emissions on the OCS is limited by section 5(a)(8) of OCSLA, which represents the full extent of BOEM's jurisdiction over OCS emissions. This is clear based not only on the plain language of the statute, but also on an examination of the statute's legislative history.

Congress amended OCSLA in 1978 to add, *inter alia*, section 5(a)(8). See Pub. L. 95-372, § 204 (1978). An earlier House version of the legislation included a proposed subsection (a)(9), which would have authorized the Secretary to regulate air quality above the OCS. See H. Rep. No. 95-590, at 9 (Aug. 29, 1977) (proposing sections 5(a)(8) and (a)(9) of OCSLA). According to the House Conference Report on the 1978 OCSLA amendments, which was recognized by the Ninth Circuit Court of Appeals as "perhaps the strongest evidence of congressional intent outside of the language of [OCSLA] itself,"² the decision *not* to adopt proposed section 5(a)(9) demonstrates "[t]he conferees' intent...that the regulations promulgated by the secretary *not* generally require that the air mass above the OCS...be brought into compliance with...air quality standards..." See H.R. Conf. Rep. No. 95-1474, at 85-86 (Aug 10, 1978) (Reprinted in 1978 U.S.C.C.A.N., 1674, 1684-1685) (emphasis added). Accordingly, by enacting the specific and limited mandates of section 5(a)(8), while simultaneously declining to enact 5(a)(9), Congress clearly intended to limit the scope of the Secretary's authority to regulate OCS emissions. This conclusion is also consistent with the well-established principle of statutory interpretation: *expressio unius est exclusio alterius* (the inclusion of one is the exclusion of others). See, e.g., *FDA v. Brown and Williamson Tobacco Corp.*, 529 U.S. 120, 160 (2000).

OCSLA does not provide any other source of authority for the Secretary to regulate OCS air emissions beyond that which is expressly granted in section 5(a)(8). First, the so-called "general regulatory authority" established in section 5(a), which was also a part of the 1978 OCSLA amendments, does not give BOEM independent authority to regulate offshore emissions for any purpose not specified in section 5(a)(8). See 43 U.S.C. § 1334(a).³ Such an interpretation would not only directly conflict with the clear intent of Congress in enacting the

² *State of California v. Kleppe*, 604 F.2d 1187, 1196 (9th Cir. 1979).

³ The "general regulatory authority" instructs the Secretary to "prescribe such rules as may be necessary to carry out [the provisions of OCSLA related to the leasing of the OCS]," and allows the Secretary "to prescribe and amend such rules and regulations as he determines to be necessary and proper in order to provide for the prevention of waste and conservation of the natural resources of the [OCS], and the correlative rights therein..." 43 U.S.C. § 1334(a).

specific scope of authority in section 5(a)(8), it would also run afoul of the fundamental principle of statutory interpretation that specific statutory language trumps more general statutory language. See *Fourco Glass Co. v. Transmirra Products Corp.*, 353 U.S. 222, 228 (1957) (“However inclusive may be the general language of a statute, it will not be held to apply to a matter specifically dealt with in another part of the same enactment.”) (citations omitted); see also *Green v. Block Laundry Machine Co.*, 490 U.S. 504 (1989). Second, the broad language at the end of section 5(a), which states that “[t]he regulations prescribed by the Secretary...shall include, *but not be limited to* [the following provisions],” also cannot be interpreted to grant the Secretary authority beyond that set forth in section 5(a)(8). Congress could not have intended to precisely prescribe the Secretary’s authority to regulate OCS emissions under section 5(a)(8), while simultaneously authorizing the Secretary to promulgate whatever air quality or emission-limiting regulations she deems appropriate. Such an interpretation would ignore the careful legislative decision-making process evidenced in the legislative history, and allow the simple phrase “not limited to” to inordinately expand the express grant of congressional authority to regulate emissions. Cf. *Whitman v. Am. Trucking Assn’s, Inc.*, 531 U.S. 457, 468 (2001) (“Congress...does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions – it does not...hide elephants in mouseholes”); *MCI Telecom. Corp. v. AT&T*, 512 U.S. 218, 231 (1994).

Because section 5(a)(8) of OCSLA limits BOEM’s authority to regulate OCS air emissions, any provision of the proposed rule that exceeds this limit is invalid and in excess of BOEM’s statutory authority. 5 U.S.C. § 706(2)(C).

1.2.1 BOEM does not have “jurisdiction” over OCS air emissions pursuant to section 328(b) of the Clean Air Act.

Proposed section 550.301, titled “Under what circumstances does this subpart apply to operations in my plan?” incorrectly asserts that section 328(b) of the Clean Air Act (CAA), 42 U.S.C. § 7627(b), gives BOEM “jurisdiction” over activities described in OCS plans. This is simply not the case. Section 328 of the CAA establishes the U.S. Environmental Protection Agency’s (EPA) authority to regulate emissions associated with “OCS sources,” which are defined in section 328(a)(4)(C) of the CAA.

The scope of CAA section 328(b) is very limited vis-à-vis the Secretary of the Interior. Specifically, it: (1) imposes on her the obligation to consult with the EPA Administrator to ensure coordination of the OCSLA regulations with EPA’s onshore pollution control regulations; and (2) requires her to complete a research study by November 15, 1993, examining the impacts of OCS emissions on onshore areas that are not in NAAQS attainment for either ozone (O₃) or nitrogen dioxide (NO₂). Section 328(b) of the CAA does not impose on the Secretary any other requirements or grant her any other authority over OCS emissions.

Because section 328(b) of the CAA does not implicate the Secretary’s “jurisdiction” in any way, BOEM should remove the reference to that provision from proposed section 550.301.

1.2.2 Proposed § 550.307(a) imposes limits on the emission of volatile organic compounds from long-term OCS sources even where there is no evidence that the VOC emissions would threaten, cause, or contribute to a violation of the NAAQS.

Section 5(a)(8) of OCSLA authorizes the Secretary to promulgate regulations for compliance with the NAAQS to the extent that activities authorized under OCSLA significantly affect the air quality of any state. As explained in OCSLA's legislative history:

[t]he standards of applicability the conferees intended the Secretary to incorporate in such regulations is [sic] that when a determination is made that offshore operations may have or are having a significant effect on the air quality of an adjacent onshore area, and may prevent or are preventing the attainment or maintenance of the ambient air quality standards of such area, regulations are to be promulgated to assure that offshore operations conducted pursuant to this act do not prevent the attainment or maintenance of those standards.

1978 U.S.C.C.A.N., 1674, 1684 (emphasis added). BOEM therefore lacks the authority to regulate OCS emissions absent a finding that those emissions: (1) "significantly" affect the air quality of a state; and (2) interfere with a state's ability to achieve or maintain compliance with the NAAQS.

BOEM proposes a three-step process for determining whether to regulate emissions of pollutants. First, under the procedures detailed in the proposed rule, the operator would determine whether emissions associated with an OCS activity are less than BOEM-identified emission exemption thresholds (EETs), based on the lessee's or operator's projected emissions. See Proposed § 550.303. If projected emissions would not exceed the EETs, then BOEM would consider the emissions *de minimis*, and no further action would be required. Proposed § 550.303(e). If, on the other hand, emissions of a pollutant were to exceed an EET, then the lessee or operator would be required to proceed to step two and model the dispersion of that pollutant to determine its impact on the air quality of an adjacent state. See Proposed § 550.304. To determine the degree of onshore impact, BOEM proposes to adopt EPA thresholds, including Ambient Air Increments (AAIs) and Significant Impact Levels (SILs), which BOEM uses as thresholds for determining whether OCS emissions cause or contribute to a violation of the NAAQS. See 81 Fed. Reg. at 19777.⁴ If projected emissions are expected to exceed the applicable thresholds, BOEM would proceed to the third step of the process and evaluate emission reduction measures (ERM) and determine whether to require emission controls.

BOEM arbitrarily proposes to abandon this three-step approach with respect to volatile organic compounds (VOCs) from long-term OCS sources. Under the proposal, if VOC emissions associated with an OCS activity are anticipated to exceed the BOEM-identified EETs (which, in

⁴ As discussed further in Section 2.2 of these comments, using AAIs for this purpose is inappropriate because AAIs are unrelated to determining compliance with the NAAQS.

the context of the other pollutants, would merely trigger dispersion modeling), BOEM would skip step two and jump to step three and require lessees or operators to propose ERM. See Proposed § 550.307(a). Although in the preamble BOEM indicates that there is no AAI or SIL for VOCs, the absence of such standards does not authorize the agency to forego determining whether VOC emissions affect attainment or maintenance of the NAAQS onshore – an express statutory requirement – before regulating them. BOEM may not impose ERMs for VOC emissions simply because the agency has no convenient standard for assessing whether those emissions affect attainment or maintenance of the NAAQS. To the contrary, absent such a determination, BOEM has no authority to regulate emissions of VOCs at all. Because this proposed truncated process would neither consider the *significance* of the effect of the emissions on the “air quality of [a] [s]tate” nor endeavor to assess the impact of the emissions on onshore *attainment or maintenance of the NAAQS*, the proposed VOC regulations in section 550.307 are inconsistent with the mandate of section 5(a)(8) and exceed BOEM’s authority.⁵

1.2.3 OCSLA does not grant BOEM any authority with respect to greenhouse gases and hazardous air pollutants.

Proposed section 550.105 defines “air pollutant” to include greenhouse gases (GHGs) and hazardous air pollutants (HAPs), even though GHGs and HAPs are outside the scope of BOEM’s authority under section 5(a)(8) of OCSLA. In the preamble, BOEM indicates that it does not intend to include GHGs or HAPs under the purview of the proposed rule. See 81 Fed. Reg. at 19739, 19751. Notwithstanding this representation, by including GHGs and HAPs in the definition of “air pollutant,” BOEM would subject GHGs and HAPs to the proposed rule’s regulatory requirements, even though these types of emissions are clearly unrelated to the attainment or maintenance of the onshore NAAQS. Such inclusion, therefore, is beyond the purview of section 5(a)(8) and is impermissible.⁶

⁵ The fact BOEM’s current regulation at 30 C.F.R. § 550.303(f) regulates VOCs in the identical impermissible manner is irrelevant. BOEM must correct its previous mistake, and it must do so in accordance with OCSLA. To do otherwise would clearly violate the Administrative Procedure Act (“APA”), 5 U.S.C. § 706, which prohibits agencies from promulgating rules that are arbitrary, capricious, or otherwise not in accordance with law.

⁶ BOEM suggests that requiring submission of GHG information and potentially regulating GHG emissions would reduce ocean acidification and reduce the effects of climate change. See 80 Fed. Reg. at 19751. These matters are simply beyond the scope of BOEM’s regulatory authority under OCSLA section 5(a)(8). See, e.g., 1978 U.S.C.C.A.N. at 1684 (“...the Secretary of the Interior shall, with appropriate regulations, assure that offshore operations conducted pursuant to [OCSLA] do not prevent the attainment of [] State [ambient air quality] standards, if the air quality of that State is significantly affected by such offshore operations”). Moreover, Congress clarified that section 5(a)(8) of OCSLA was *not* intended to protect offshore resources. See *id.* at 1864-65 (explaining that “[t]he conferees intent was that the regulations promulgated by the Secretary not generally require that the air mass above the OCS itself be brought into compliance with national or State ambient air quality standards but that regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area”).

BOEM incorrectly assumes that section 5(a)(8) authorizes it to compel lessees to incur the time and expense to collect, maintain, and disclose to BOEM information relating to GHG and general air pollutant emissions. See, e.g., Proposed § 550.187 (requiring lessees and operators to collect, maintain, and report “information regarding *all air pollutant emissions* from all emission sources associated with [OCS] operations”) (emphasis added); see also 81 Fed. Reg. at 19722, 19747, 19750 (discussing same). More specifically, proposed section 550.187 would codify and make mandatory the existing Gulf of Mexico Region (GOMR) mechanism for reporting ongoing emissions under the Gulf-wide Offshore Activities Data System (GOADS), as provided for in BOEM Notice to Lessees and Operators (NTL) No. 2014-G01, which provides for the collection of GHG and HAP information from operators that voluntarily submit it.⁷ Similarly, under proposed section 550.303, BOEM would establish “the rate of projected emissions, calculated for each *air pollutant*, above which facilities would be subject to the requirement to perform modeling,” and require lessees and operators to calculate, report, and compare projected emissions of pollutants for the purpose of determining whether modeling is required. In addition, proposed section 550.303(d) would require lessees and operators to account for, consolidate, and model all “air pollutant emissions” from multiple facilities. Because BOEM proposes to include GHGs and HAPs in the definition of “air pollutant,” all of the requirements discussed above would apply to GHGs and HAPs even though they are unrelated to the attainment and maintenance of the NAAQS.⁸ BOEM cites no authority for its inclusion of GHGs and HAPs, and OCSLA does not grant it any.^{9, 10}

BOEM suggests that requiring lessees and operators to submit GHG and HAP emissions information will assist in the preparation of future environmental reviews under the National

⁷ Although NTLs interpret and clarify existing rules, they cannot impose new regulatory requirements. Previous BOEM attempts to use NTLs to impose substantive new requirements have failed. See, e.g., *Ensco Offshore Co. v. Salazar*, No. 10-1941, 2010 WL 4116892, at *5 (E.D. La. Oct. 19, 2010) (invalidating NTL No. 2010-N05 because it was a substantive rule masquerading as interpretative guidance that was not promulgated in accordance with APA notice-and-comment procedures). This line of cases makes clear that APA rulemaking would be required to make GOADS reporting mandatory.

⁸ The mere fact that industry has, in certain instances, voluntarily complied with BOEM requests for HAP and GHG emissions information, does not grant BOEM the authority to compel industry to gather and produce such information, or to penalize lessees for refusing to submit such information.

⁹ Although other OCSLA provisions impose on BOEM certain responsibilities and authorities, none authorize the requirements BOEM is now seeking to impose. See, e.g., 43 U.S.C. § 1344(a) (requiring BOEM to take various information into account when developing each 5-year plan, but providing no independent authority to compel lessees to provide information for that purpose); *id.* at § 1346 (requiring BOEM to undertake various studies, but providing no independent authority to compel lessees to gather and produce information to support those efforts); *id.* at § 1348 (requiring lessees to maintain safe workplaces, but providing no authority to compel lessees to gather and produce to BOEM information regarding HAP and GHG emissions).

¹⁰ Because black carbon is also not related to compliance with the NAAQS, BOEM similarly lacks the authority to regulate it, notwithstanding BOEM’s stated interest in doing so in the future. See 81 Fed. Reg. at 19724.

Environmental Policy Act (NEPA). NEPA does not grant BOEM the authority to impose information-gathering requirements on lessees and operators in the hopes that such information will be useful for future analyses or serve a public or governmental purpose. Instead, NEPA requires agencies to gather the environmental information necessary to make a reasoned choice among the alternatives when deciding whether, and under what conditions, to undertake a *specific* course of action (such as approving a project). It is well established that the purpose of NEPA is to inform agency decision making. 40 C.F.R. § 1500.1(c); *Pacific Legal Found. v. Andrus*, 657 F.2d 829, 837-38 (6th Cir. 1981) (although compliance with NEPA serves to inform policymakers and the public, “[t]his ... does not exist independent of the primary purpose to insure an informed decision by the agency contemplating federal action....[Informing policymakers and the public] is an added benefit derivative of the primary [decision making] purpose”).

With respect to NEPA analyses conducted for specific project approvals under OCSLA, HAP and GHG emissions information cannot influence BOEM’s decision-making. This is because BOEM’s decision space to approve Exploration Plans (EPs), Development and Production Plans (DPPs), and Development Operations Coordination Documents (DOCDs) under OCSLA is severely limited. For example, section 11(c) of OCSLA, *requires* BOEM to approve an EP if it complies with applicable regulations, including those “prescribed...pursuant to [OCSLA section 5(a)(8)].” 43 U.S.C. § 1340(c). Accordingly, if the EP complies with the section 5(a)(8) regulations, BOEM *must* approve it. Because section 5(a)(8) itself cannot be used to compel production of GHG or HAP emissions, and no other section of OCSLA, including the “general rulemaking” provisions of section 5(a), can be used to compel disclosure of such information, BOEM lacks the authority to disapprove an EP for failure to produce HAP or GHG emissions information. BOEM similarly lacks the authority to condition approval of an EP based on the lessee controlling or reducing HAP or GHG emissions associated with the plan. Simply put, OCSLA *requires* BOEM to approve an otherwise compliant plan, regardless of the associated HAP or GHG emissions, and leaves no room for BOEM to consider HAPs and GHGs in deciding whether to approve, approve with modifications, or deny EPs, DPPs, and DOCDs.¹¹ Given this constrained decision space, BOEM has no obligation under NEPA to consider HAP or GHG emissions when deciding to approve, approve with modifications, or deny a plan. See, e.g., *DOT v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (“Since [the Federal Motor Carrier Safety Administration (“FMCSA”)] has no ability categorically to prevent the cross-border operations of Mexican motor carriers, the environmental impact of the cross-border operations would have no effect on FMCSA’s decisionmaking—FMCSA simply lacks the power to act on whatever information might be contained in the EIS”); *Alaska Wilderness League v. Jewell*, 788 F.3d 1212 (9th Cir. 2015) (agencies need not comply with NEPA when their discretionary decision space is constrained by statute); cf. *DOT*, 541 U.S. at 768 (noting that a “rule of reason” is inherent in NEPA and its implementing regulations, “which ensures that agencies determine whether and to what extent to prepare an EIS based on the usefulness of ... information to the decisionmaking

¹¹ Under OCSLA, BOEM may disapprove an otherwise compliant plan, *i.e.*, one that complies with section 5(a)(8), *only* if approving the plan would constitute such a threat to the human or marine environment, or to national security, that cancellation of the underlying lease would be necessary. See 43 U.S.C. § 1334(a)(2)(A). The HAPs or GHGs emissions associated with a plan could not create such a situation.

process") (emphasis added). Accordingly, BOEM has no authority to compel lessees to produce such information.

In sum, section 5(a)(8) does not authorize BOEM to require lessees to gather and disclose GHG or HAPs emissions information to the agency, and BOEM has not cited any authority that would permit it to do so. Consequently, BOEM should remove from the proposal any provision requiring lessees to obtain, analyze, report, or control emissions of HAPs and GHGs.

1.2.4 BOEM cannot regulate emissions from mobile support craft, which are outside the scope of BOEM's jurisdiction, by "attributing" these emissions to OCS facility emissions.

Proposed section 550.302 includes mobile support craft (MSC), including vessels, in the definition of "facility." Thus, as drafted, the proposed rule would impermissibly force applicants to account for MSC emissions and subject MSC emissions to direct BOEM regulation.

Additionally, proposed sections 550.205(d) and (e) and 550.224(b) would impermissibly "attribute" MSC emissions to the emissions of a facility, presumably regulating the emissions of platforms to offset the emissions of "associated" MSC even though neither section (5)(a)(8), nor the other requirements of OCSLA, apply to MSC.

The scope of BOEM's authority prevents it from directly regulating MSC emissions or attributing MSC emissions to OCS facilities. First, under section 5(a)(8), BOEM cannot consider MSC emissions when determining whether "*activities authorized under [OCSLA]* significantly affect the air quality of [a] [s]tate" because MSC are not "*activities authorized under [OCSLA]*." This is true even though MSC are included in the plans submitted for BOEM approval, because BOEM does not approve, regulate, or otherwise authorize them.¹² Second, section 4(a) of OCSLA further limits the Secretary's regulatory authority to "artificial islands... and ... installations... permanently or temporarily attached to the seabed, which may be erected thereon

¹² For example, icebreakers, support vessels, crew boats, and aircraft are free to traverse the waters and air above the OCS without any authorization or permission from BOEM. Even mobile offshore drilling units ("MODUs") may travel where they wish without authorization from BOEM. At the same time, however, no person may drill for oil and gas in the OCS without BOEM authorization. 43 U.S.C. § 1340. Similarly, the construction, installation, and operation of an OCS facility also requires BOEM authorization. So for example, while regulations promulgated under section 5(a)(a) of OCSLA apply to a MODU's emissions while it is engaged in drilling in the OCS under BOEM authorization, they do not apply to that MODU while it is underway.

Aircraft or other MSC are simply outside the purview of section 5(a)(8) of OCSLA, because they require no authorization or permission from BOEM to do anything. Even while on an OCS production platform, for example, they can neither be regulated as facilities nor included in emissions calculations under section 5(a)(8) unless they are performing an activity specifically authorized by BOEM. Thus, BOEM should remove all provisions from the proposed rule that would account for the emissions of aircraft or the operation of onshore facilities, which are clearly not "*activities authorized under [OCSLA]*." See Proposed §§ 550.205(m), 550.224(b), 550.225(b), and 550.304(f).

for the purpose of exploring for, developing, or producing resources therefrom.” 43 U.S.C. § 1333(a). MSC are clearly not “artificial islands . . . permanently or temporarily attached to the seabed” that are “exploring for, developing, or producing” oil and gas.¹³ So BOEM’s regulatory authority cannot extend to MSC because they are not “permanently or temporarily attached to the seabed” for the purpose of “exploring for developing, or producing” oil and gas. See *also REDOIL v. EPA*, 716 F.3d 1155 (9th Cir. 2013) (support vessels that are not “[p]ermanently or temporarily attached to the seabed,” or “[p]hysically attached to an OCS facility,” are not “regulated or authorized under [OCSLA]”).

The OCSLA legislative history supports the exclusion of MSC emissions from BOEM’s regulatory authority. The Conference Report accompanying the 1978 OCSLA amendments only contemplates regulating emissions from OCS installations and platforms under section 5(a)(8), and does not indicate any concern for the emissions from vessels or anything other than “authorized” installations and platforms:

The conferees [sic] intent was that the regulations promulgated by the Secretary not generally require that the air mass above the OCS itself be brought into compliance with the [NAAQS] but that regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is controlled to prevent a significant effect on the air quality of an adjacent onshore area.

1978 U.S.C.C.A.N. at 1684-1685 (emphasis added). Consistent with the jurisdictional scope of section 4(a) of OCSLA, the report does not consider assessing or controlling emissions from any source other than an installation or platform.

BOEM should therefore modify the definition of “facility” as follows to exclude MSC from BOEM’s regulatory purview (the underlined text reflects proposed additions while the strikeout text represents proposed deletions), and to clarify that the air quality review applies only to activities under its jurisdiction:

§ 550.302 *Acronyms and definitions concerning air quality.*

... Facility means, any installation, structure, ~~vessel, vehicle,~~ equipment, or device that is temporarily or permanently attached to the seabed of the OCS for the purpose of exploring for, developing, or producing oil or gas or sulphur therefrom, and which emits a regulated criteria or precursor pollutant, including but not limited to a dynamically positioned ship, gravity-based structure, manmade island, or bottom-sitting structure,

¹³ As particularly relevant here, Congress expressly excluded one type of MSC – vessels – from OCSLA’s purview. See 43 U.S.C. §§ 1332 (1)-(2) (“the subsoil and seabed of the [OCS] appertain to the United States and are subject to its jurisdiction and control...[OCSLA] shall be construed in such a manner that the character of the waters above...[are] high seas, and the right to navigation...therein shall not be affected”); *id.* at § 1333(a)(1) (extending the jurisdiction of the U.S., through OCSLA, to “such installation or other device (*other than a ship or vessel*) [attached to the seabed] for the purpose of transporting [oil and gas] resources”) (emphasis added).

whether used for the exploration, development, production or transportation of oil, gas, or sulphur. All Installations, structures, ~~vessels, vehicles~~ equipment, or devices directly associated with ~~the construction, installation, and implementation of a~~ the facility are a part of a facility only while located at the same site, attached, or interconnected by one or more bridges or walkways, or while dependent on, or affecting the processes of, the facility, including any ROV attached to the facility. One facility may include multiple drill rigs, drilling units, ~~vessels, platforms, installations, devices, and pieces of equipment.~~ Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the “tender assist” mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels, while temporarily or permanently attached to the seabed and exploring for, developing, or producing oil and gas or sulphur resources. Facilities also include ~~all~~ Floating Production Systems (FPSs), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars-, while temporarily or permanently attached to the seabed. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. ~~Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.~~

1.2.5 The proposal impermissibly assesses emissions impacts at the seaward boundary of states rather than at the shoreline.

Proposed section 550.205(i) would relocate from the state shoreline to the seaward edge of state territorial waters the “compliance boundary” that is used for determining exemptions from detailed analyses, the need for modeling, the significance of air impacts, whether emissions cause or contribute to a violation of the NAAQS, and the need for ERM. See 81 Fed. Reg. at 19738-19740, 19794. Although a state’s territory extends to its seaward boundary, this is not the appropriate point at which to assess air-quality impacts for a number of reasons.

First, as discussed, under section 5(a)(8) the Secretary’s authority is limited to promulgating regulations for “*compliance with the [NAAQS] pursuant to the [CAA] to the extent that activities authorized under [OCSLA] significantly affect the air quality of any State.*” (emphasis added). Under the relevant state implementation plans (SIPs) (the vehicles through which states must demonstrate how they will achieve and maintain compliance with the NAAQS), the border of the air quality control regions (AQCR) appears to extend only to the shoreline and not to the respective states’ territorial waters. As such, NAAQS do not apply in the territorial waters. Using the seaward boundary of the territorial waters as the point for determining NAAQS compliance under section 5(a)(8) therefore is inconsistent with BOEM’s statutory authority.¹⁴

¹⁴ In contrast, Texas appears to apply Title V federal operating permit requirements to stationary sources in its territorial waters. See Title V Program Applicability, http://www.tceq.state.tx.us/permitting/air/titlev/pro_applicability.html (“The 30 TAC Chapter 122 requirements also apply to stationary sources in the State of Texas territorial waters.”). However, obtaining a Title V federal operating permit is not relevant to OCSLA section 5(a)(8) because it is distinct from NAAQS compliance.

Second, when enacting section 5(a)(8), Congress clearly was concerned only with impacts to *onshore* air quality. For example, the legislative history states:

The standards of applicability the conferees intended...is that when a determination is made that offshore operations may have or are having a significant effect on the air quality of an adjacent onshore area, and may prevent or are preventing the attainment of the ambient air quality standards of such area, regulations are to be promulgated to assure that offshore operations conducted pursuant to this act do not prevent the attainment or maintenance of those standards....The conferees intent was that...regulations might be appropriate for the air above or near an artificial or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area.

1978 U.S.C.C.A.N. at 1684-1685.

Third, BOEM itself recently acknowledged that because the NAAQS are intended to protect human health, BOEM is only concerned with the onshore impacts of OCS activities. See BOEM 2017-2022 Draft Multisale EIS at xvii (“Since the primary NAAQS are designed to protect human health, BOEM focuses on the impact of these activities on the States, where there are permanent human populations”). Here, however, BOEM proposes to assess air quality impacts of OCS activities at the seaward edge of the state’s territorial waters even though there are no “permanent human populations” in such areas. BOEM’s proposal is therefore inconsistent with the purpose of the NAAQS, as expressly acknowledged by BOEM.

Finally, BOEM’s proposal to use the seaward boundary of the states’ territorial waters to assess air quality impacts of OCS activities is arbitrary because the geographic extent of states’ territorial waters is not uniform. Texas’ territorial waters, for example, extend 9 nautical miles (nmi) seaward from shore, while Louisiana’s territorial waters only extend 3 nmi. BOEM does not offer any legally defensible rationale, based on NAAQS compliance or otherwise, for its proposal to assess OCS emission impacts in some places at 3 nmi from shore and in other places at 9 nmi from shore.

For all of these reasons, the point at which OCS air impacts are assessed must be the shoreline and not the state seaward boundary.

1.2.6 BOEM’s proposal to enforce compliance with federal, state, or tribal laws related to air quality exceeds the agency’s authority.

Proposed section 550.313(a)(6) would allow BOEM to impose “additional requirements on facilities operating under already approved plans” if the “operation is violating any applicable federal, State, or tribal law related to air quality.” However, BOEM lacks the authority to enforce any air quality-related laws that are not designed to ensure compliance with the NAAQS, e.g., those laws intended to regulate HAPs, GHGs, odors, noise, nuisance, and other air quality-

related values (AQRVs).¹⁵ Because of this lack of authority, BOEM cannot impose on any OCS facility “additional requirements” unrelated to compliance with the NAAQS.

1.2.7 BOEM lacks a legal justification for including other “Federal Land Managers” in determining compliance with section 5(a)(8) or for requiring additional information and analysis in response to their concerns.

Because OCSLA authorizes BOEM to regulate OCS activities only for compliance with the NAAQS, BOEM cannot regulate “significant” air quality impacts in and of themselves. Yet, section 550.303(h) proposes to do precisely that by providing federal land managers (FLMs) an open-ended invitation to raise issues, require studies, and require mitigation of air impacts on AQRVs in sensitive onshore areas managed by FLMs. See 81 Fed. Reg. at 19775. BOEM, however, fails to provide a sufficient nexus between AQRV protection and NAAQS compliance to justify this proposed requirement. The CAA charges FLMs with the separate and distinct obligation to protect AQRVs within their respective CAA jurisdictions. OCSLA did not grant FLMs any authority over OCS emissions, and it did not authorize BOEM to use its section 5(a)(8) authority as a means of protecting AQRVs that are of concern to FLMs.¹⁶ Accordingly, BOEM should remove those portions of proposed section 550.303(h) from the final rule that would involve FLMs in determining compliance with section 5(a)(8) of OCSLA or that would allow BOEM to impose any non-OCSLA related requirement on lessees at the behest of FLMs.

1.3 BOEM may not use its limited regulatory authority over air emissions to reconsider already approved plans, or to impose new requirements on existing facilities.

1.3.1 The proposal should not require ongoing emissions monitoring and reporting to ensure continued compliance with the air quality regulations, and should not impose new air quality requirements in the absence of a plan review.

Proposed sections 550.309(d), 550.311, 550.312, and 550.313 require ongoing emissions reporting to ensure continued compliance with regulations promulgated under OCSLA section 5(a)(8). This is inconsistent with congressional intent, as it would impose new requirements on an already-approved plan. Congress intended that the regulations promulgated under section 5(a)(8) would only apply at the plan approval stage. See, e.g., 43 U.S.C. § 1340(c)(1) (requiring approval of an EP if the applicant complies with regulations promulgated under OCSLA section 5(a)(8)); *id.* at § 1351(h)(1) (allowing approval of a DOCD only if the applicant complies with regulations promulgated under OCSLA section 5(a)(8)); 78 U.S.C.C.A.N. at 1685 (“exploration plans... and development and production plans ... are to comply with any regulations promulgated pursuant to section 5(a)(8) of [OCSLA] ... *Thus, in considering approval,*

¹⁵ AQRVs are a key component of Class I prevention of significant deterioration (PSD) reviews under the CAA, which are clearly beyond the purview of BOEM’s authority to regulate for compliance with the NAAQS.

¹⁶ FLMs have no place in determining whether OCS operations comply with BOEM’s section 5(a)(8) regulations. Although they might have special “expertise” to evaluate the impacts of emissions on AQRVs in the areas they manage (81 Fed. Reg. at 19775), this is not relevant for the purpose of section 5(a)(8) compliance.

*modifications, and disapproval of a **submitted** exploration plan or development and production plan*, the Secretary is to insure compliance with any applicable regulations promulgated...pursuant to section 5(a)(8)” (emphasis added). BOEM’s proposal to use its section 5(a)(8) authority to require ongoing emissions monitoring and reporting, and to impose new emission requirements even when a new plan has not been submitted, exceeds the scope of BOEM’s authority to ensure compliance with the NAAQS under OCSLA section 5(a)(8).

1.3.2 The requirement to resubmit and obtain re-approval of previously approved plans is problematic and presents potential breach of contract and takings issues.

Proposed section 550.310(c) would require lessees to resubmit previously approved plans at least every 10 years to verify compliance with BOEM’s current air quality regulations, including those provisions relating to new information gathering and reporting requirements. *See also* proposed rule §§ 550.284; 550.303(g); 550.309(d).¹⁷

The requirement to resubmit plans every 10 years is inconsistent with section 25(h)(3) of OCSLA, which indicates that BOEM can only review an existing plan “based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan.” 43 U.S.C. § 1351(h)(3). BOEM lacks the authority to require resubmission or revision of an already-approved plan, absent some indication of changed conditions or impacts. It follows, therefore, that BOEM may not promulgate a regulation imposing a blanket requirement that all operators periodically resubmit their plans for review unless there is a specific showing that each resubmitted plan warrants review because there have been changed conditions or impacts. Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone cannot possibly constitute grounds for resubmission and re-approval, on new and far more onerous terms, of existing DPPs and DOCDs. Accordingly, BOEM may not require resubmission and re-approval of existing plans as proposed.¹⁸

¹⁷ Although BOEM does not specify the consequence that will follow if BOEM is dissatisfied with the resubmitted plan, the proposal suggests that failure to resubmit a plan could result in revocation of the lessee’s existing plan. Moreover, the criteria for revoking an existing plan are unclear. Under OCSLA, the standard for *disapproving* a plan application is the same as for lease *cancellation*. The threshold for plan *revocation* should be at least as high. OCSLA permits lease cancellation only in the narrowest and most extreme circumstances. *See, e.g.*, 43 U.S.C. § 1334(a)(2) (requiring a showing of imminent and “serious harm” to life, property, national security, or the marine, coastal or human environment, and requiring a hearing, suspension period, and compensation, prior to cancelling a producing lease). It is doubtful that emissions from existing facilities, much less reduced emissions from future facilities, can ever present such an imminent threat.

¹⁸ Indeed, it appears that BOEM is attempting to leverage its authority to review plans and cancel leases under OCSLA to coerce lessees into providing scientific information that is unrelated to OCSLA

Although finalizing this plan resubmission requirement would be arbitrary and capricious, if BOEM nonetheless included such a requirement in the final rule, then at a minimum, it should clarify that: (1) the resubmitted plan will be reviewed for continued compliance with onshore NAAQS, and (2) additional conditions will be imposed only where operations are “significantly” affecting the air quality of a state and preventing attainment or continued compliance with the NAAQS onshore.

1.4 Proposed § 550.303(d) improperly requires aggregation of emissions across “proximate” facilities with common partial ownership or control, and which are contemporaneously operated.

BOEM is inappropriately attempting to transpose to the OCS EPA’s Title V and New Source Review onshore permit programs, under which two or more stationary sources may be treated as a single stationary source for emission aggregation purposes, if, among other things, they are under common ownership or control and are “contiguous and adjacent.”¹⁹ First, BOEM’s proposal is inconsistent with OCLSA because the CAA does not apply to OCS areas that are subject to section 5(a)(8). Second, BOEM’s proposal in this regard reflects a fundamental misunderstanding of OCS lease ownership and operations.

As an initial matter, there is no basis for BOEM’s tacit assumption that “common” ownership equates with “common” control on the OCS. *Cf. U.S. v. Bestfoods*, 118 S. Ct. 1876 (1998). A cursory review of a BOEM serial register page for a lease block demonstrates that OCS leases frequently have numerous fractional interest owners, including both record title and operating rights owners, with varying degrees of control (or no control at all) over operations. Imposing coordinated and interrelated air-quality responsibilities on two or more proximately located facilities, even if the leases on which they are located share one or some common record title or operating rights holders, is arbitrary and unfair because owners without the power to ensure compliance with the “aggregated” air quality responsibilities could nevertheless be held liable for noncompliance.²⁰ Because holding non-common or non-controlling interest owners responsible

compliance (e.g., as GHG, HAP, and other information reporting requirements). In essence, BOEM is telling lessees that wish to continue operating on the OCS that they can do so *only* if they also submit to participation in an independent and unrelated program for acquiring, analyzing, and disclosing emissions information and reducing air pollution from various sources that far exceeds that authorized under OCSLA. BOEM may not engage in such coercive behavior. *Cf. NFIB v. Sebelius*, 132 S. Ct. 2566, 2602-2607 (establishing the “anti-leveraging principle” and holding that federal imposition of new conditions constitutes impermissible coercion when the conditions “take the form of threats to terminate other significant independent grants”).

¹⁹ *Cf. Summit Petroleum Corp. v. EPA*, 690 F.3d 733 (6th Cir. 2012) (vacating EPA’s single source determination and holding that the term “adjacent” unambiguously refers to physical proximity, and that EPA’s interpretation that a natural gas sweetening plant and various sour gas production wells located across an area of approximately 43 miles were a single source because there were “adjacent” was unreasonably inconsistent with the plain meaning of that term).

²⁰ To illustrate, under the proposal’s vague provisions, a person who holds a 5 percent non-controlling

for the regulatory compliance of all aggregated leases raises serious due process and confidentiality concerns in addition to basic practicability concerns, BOEM should withdraw proposed section 550.303(d), and reconsider its proposal to aggregate OCS leases simply on the basis of “common ownership and control.”

Additionally, “contemporaneous operation” of proximate leases cannot be used as a trigger for the imposition of new emissions reporting or mitigation requirements under section 5(a)(8). Only the submission of an EP or DPP/DOCD (or arguably the periodic review of a DPP/DOCD), can trigger BOEM’s section 5(a)(8) authority. See 43 U.S.C. §§ 1340, 1351.

1.5 BOEM’s proposal to grant itself or other agencies unlimited discretion to dictate future requirements on an ad-hoc basis and to disregard its self-imposed requirements violates the APA.

1.5.1 Proposed §§ 550.308 and 550.313 would allow BOEM to sidestep the entire regulatory process established in the proposed rule and arbitrarily impose regulatory requirements in excess of its section 5(a)(8) of OCSLA authority.

BOEM proposes to allow the Regional Supervisor to require a lessee or operator to apply “additional [emission reduction measures, (ERMs)] on either a temporary or permanent basis, depending on the circumstances, if he/she determines that projected emissions, or where applicable[,] complex total emissions, may cause or contribute to a violation of a NAAQS.” Proposed rule § 550.308(a). The very purpose of the proposed rule is to establish a carefully-crafted, scientifically defensible, reasonably implementable system for determining whether project emissions may cause or contribute to a violation of the NAAQS, and, if so, which ERMs should be imposed. Including a provision that would allow the Regional Supervisor to simply

interest in lease A and a 5 percent non-controlling interest in lease B could be held liable for compliance (or noncompliance) with the proposal’s emissions and reporting requirements for *both leases*. More importantly, *all* of the remaining 95 percent interest owners in each lease would *also* be held liable for the compliance of *both leases, even if they only have an interest in one of them*. This is because the 5 percent “common” owner could provide grounds for aggregation under the “common ownership or control” provision of the proposed rule.

It is also possible that each lease has a different operator, which adds further complexity, since operators of one lease are usually contractually obligated to keep information about the lease confidential from owners of other leases. While on the one hand everyone who will be held responsible for the lease A’s compliance should have access to the relevant compliance information for that lease, those that only have ownership interest in lease B are not entitled to any information concerning lease A, much less the ability to control what happens on lease A.

Aggregating three or more leases would increase the complexity exponentially. BOEM has failed to consider these issues, and it does not explain how these obvious concerns would be resolved in the context of the proposed rule.

ignore the entire proposed regulatory scheme, make his or her own NAAQS compliance determination, and impose his or her own emission controls at will, is plainly arbitrary.²¹

Proposed section 550.313 is also flawed for many other reasons. First, that provision would allow BOEM to unilaterally “impose additional air quality requirements on facilities operating under already approved plans” if BOEM determines, *inter alia*, that the operation is emitting “unauthorized pollutants,” “creating conditions posing an unreasonable risk to public health or welfare,” or “violating any applicable federal, State, or tribal law related to air quality.” Although it is unclear what “unauthorized pollutant” means, as discussed above, under section 5(a)(8) BOEM may only regulate criteria pollutants that cause or contribute to nonattainment of the NAAQS. Proposed section 550.313 is also unacceptably vague because it fails to explain what would constitute emissions of pollutants sufficient to present an “unreasonable risk to public health and welfare.” Again, section 5(a)(8) only addresses compliance with the NAAQS and does not grant BOEM overarching authority to generally “protect public health and welfare” (in fact, that is what the NAAQS are for) or to ensure compliance with air quality laws in general.

In addition, proposed section 550.313 conflicts with proposed section 550.303(d), which limits facility aggregation to “proximate” facilities with “common ownership.” Proposed section 550.313 would instead permit aggregation with “any offshore operation” regardless of proximity, ownership, or control, rendering proposed section 550.303(d) superfluous. (emphasis added). Additionally, because Congress intended that the regulations promulgated under section 5(a)(8) apply only at the plan review and approval stage, BOEM may not simply impose new “air quality” requirements (even if it had the authority to do so, which, as discussed above, it does not) on facilities operating under an already-approved plan. Consequently, BOEM should remove proposed sections 550.308 and 550.313 from the final rule.

1.5.2 Proposed § 550.312 inappropriately authorizes BOEM to impose meteorological data gathering and reporting requirements at its discretion.

Proposed section 550.312(c) would require lessees to submit meteorological data “for a period of time and in a manner approved or prescribed” by the Regional Supervisor. This proposed provision fails to inform the regulated community what is required of it and proposes to allow the agency to simply make up the rules as it goes along. BOEM may not reserve such broad discretion to dictate future requirements on an ad-hoc basis.

All regulations must be sufficiently clear and specific so the regulated community has “fair notice” of the regulatory requirements. *FCC v. Fox Television Stations, Inc.*, 132 S. Ct. 2307, 2309 (2012); *see also id.* at 2317-18 (“A fundamental principle in our legal system is that laws which regulate persons or entities must give fair notice of conduct that is forbidden or required”); *Papachristou v. Jacksonville*, 405 U.S. 156, 162 (1972) (“Living under a rule of law entails various suppositions, one of which is that [all persons] are entitled to be informed as to what the

²¹ Although proposed section 550.308(b) allows lessees and operators to challenge the Regional Supervisor’s determinations, BOEM should clarify that section 550.308(b) does not preclude administrative appeal of the Regional Supervisor’s decision to the Interior Board of Land Appeals pursuant to 30 C.F.R. § 550.290.

State commands or forbids”) (quoting *Lanzetta v. New Jersey*, 306 U.S. 451, 453 (1939) (alteration in original).

The requirement that regulations be clear stems from the protections provided by the Due Process Clause of the Fifth Amendment, and leads courts to invalidate laws and regulations that are impermissibly vague. See, e.g., *Fox Television Stations*, 132 S. Ct. at 2317; *United States v. Williams*, 553 U.S. 285, 304 (2008). According to the Supreme Court: “The void for vagueness doctrine addresses at least two connected but discrete due process concerns: regulated parties should know what is required of them so they may act accordingly; and precision and guidance [in rulemaking] are necessary so that those enforcing the law do not act in an arbitrary or discriminatory way.” *Id.* Here, BOEM must propose the specific criteria for timing and content of data submissions and subject its proposal to the notice-and-comment rulemaking process under the Administrative Procedure Act (APA).

1.5.3 Proposed § 550.304(e) inadequately specifies the methods lessees must use when determining ambient air quality.

Proposed section 550.304(e) prescribes the methods lessees must use when estimating the quality of the ambient air in the area that may be impacted by their operations. The provisions of proposed section 550.304(e) are vague, nonspecific, and indicate that BOEM may in the future issue a NTL informing lessees how to conduct this critical analysis. Prescribing methods for estimating ambient air quality is a quasi-legislative exercise that may only be effectuated via APA notice-and-comment rulemaking. NTLs are not rules, and BOEM may not use them to impose substantive or binding requirements on lessees. See *EnSCO Offshore Co. v. Salazar*, No. 10-1941, 2010 U. Dist. LEXIS 111226, 2010 WL 4116892, *15-17 (E.D. La. Oct. 19, 2010). Accordingly, to the extent BOEM declines to adopt states’ or EPA’s existing assessments of onshore ambient air quality, BOEM may only prescribe methods for lessee estimation of ambient air quality through the APA rulemaking process.

1.5.4 Proposed § 550.312 would inappropriately allow other agencies to impose additional monitoring or reporting requirements at their discretion.

Section 550.312 appears to permit BOEM to authorize other agencies to impose additional monitoring or reporting requirements on operators or lessees. See 81 Fed. Reg. at 19785. However, BOEM may not delegate its OCSLA regulatory authority to other agencies, and may only impose air quality control and reporting requirements consistent with section 5(a)(8) of OCSLA.

1.5.5 The proposed rule’s reservation of discretion to BOEM to revise emission exemption thresholds for any reason, without expressly requiring additional rulemaking, presents APA concerns.

Revising the regulatory emissions thresholds is a quasi-legislative exercise because it imposes new standards that are binding on lessees and the agency. See *Gen. Motors Corp. v. Ruckelshaus*, 742 F.2d 1561, 1565 (D.C. Cir. 1984). Although the proposal indicates that BOEM would propose new thresholds and seek public comment before finalizing any future changes (see 81 Fed. Reg. at 19773), BOEM must engage in full APA notice-and-comment rulemaking before changing EETs. See 5 U.S.C. §§ 553, 706.

1.5.6 BOEM proposes to require measurement of actual emissions on facilities with emissions above “a specific threshold,” and requests comment on what that threshold should be in the final rule.

In the preamble BOEM proposes to require measurement of actual emissions on facilities with emissions above “a specific threshold,” and requests comment on that threshold. 80 Fed. Reg. at 19746. Establishing a threshold for requiring measurement of *actual emissions*, an exceedingly difficult, expensive, and burdensome proposition, is a critically-important quasi-legislative exercise. The threshold BOEM is considering must be proposed with sufficient specificity to facilitate meaningful stakeholder comment before finalization. To do otherwise would violate the APA, 5 U.S.C. § 553. Accordingly, BOEM must first propose a threshold for public comment before it can issue a final regulation.

1.6 The potentially perpetual recordkeeping requirement proposed § 550.205(j) imposes is unjustified.

Although proposed section 550.205(j) requires lessees to “maintain” records of any data or information “establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate their projected emissions,” it does not indicate how long these records must be maintained. 81 Fed. Reg. at 19759. BOEM may not impose a potentially interminable records retention requirement, and must propose a reasonable records retention period, such as five years or the life of the plan, whichever is less. *See Fox Television Stations, Inc.*, 132 S. Ct. at 2317-18; *Trinity Broad. of Fla., Inc. v. FCC*, 211 F.3d 618, 628 (D.C. Cir. 2000).

1.7 The proposed rule will impose new administrative burdens on BOEM that will impair its ability to timely process applications for plan approvals.

Pursuant to 30 C.F.R. § 550.231, BOEM only has fifteen days to deem complete an EP, and it only has thirty days thereafter to approve, disapprove, or approve the plan with modifications. Even if an operator or lessee were to submit a plan in full compliance with the proposed rule, it would be impossible for BOEM to review the voluminous amount of information (including data, emissions information, modeling, etc.) required under the proposed rule within the required timeframes. This is more than a problem of administrative efficiency. Requiring applicants to submit a volume of information that cannot be reviewed within the regulatory timeframe constitutes an impermissible violation by BOEM of its own regulations. Such a result is also contrary to Congress’ intent to ensure that compliance with section 5(a)(8) does not interfere with the timeframes established for plan review and approval. As stated in the legislative history:

The conferees do not intend that the application of section 5(a)(8) regulations will interfere with the time periods provided in the conference report for review and approval of exploration plans, and development and production plans. The conferees expect that these regulations will be implemented consistently with the timetables established by these amendments.

78 U.S.C.C.A.N. at 1685. Consequently, BOEM should only promulgate those regulations that are absolutely necessary to address the purported problem of onshore air quality and avoid

imposing excessive, expensive, and time-consuming administrative burdens on lessees and the agencies that do nothing to further Congressional goals.

1.8 BOEM’s cursory regulatory impact analyses and its non-compliance with executive orders underscore the arbitrary nature of the proposed rule.

Under the APA, a rule’s validity depends on the quality of analysis supporting the rule and whether the agency’s conclusion is rationally related to the facts in the record. *See, e.g., R.J. Reynolds Tobacco Co. v. FDA*, 696 F.3d 1205, 1220 (D.C. Cir. 2012), *overruled on other grounds by Am. Meat Inst. v. USDA*, 760 F.3d 18 (D.C. Cir. 2014) (examining FDA’s Regulatory Impact Analysis and noting that FDA lacked the evidence to support its decision); *see also Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 56 (1983) (explaining that the agency must articulate a “rational connection between facts and judgment required to pass muster under the arbitrary and capricious standard”). Here, BOEM has severely underestimated the regulatory impacts of its proposal. This, coupled with its noncompliance with various executive orders intended to ensure a reasoned decision-making process, undermines the validity of BOEM’s proposed rule.²²

²² For example, BOEM concluded that the proposal is “not a significant energy action” under E.O. 13211 (May 18, 2001). It also simultaneously concluded that, although the regulation is necessary to protect onshore air quality, the rule would have “minimal” impact on public health, safety, welfare and the environment under E.O. 1356, presumably because “OCS operations have a minimal impact on the air quality onshore.” Oil, Gas, and Sulphur Operations in the Outer Continental Shelf 30 CFR Part 550 – Proposed Subparts A, B, C and J, Environmental Assessment (March 2016) at 17. All these conclusions are internally inconsistent and undermine BOEM’s rationale for the proposed rule.

2 General Comments

2.1 OCSLA's mandate for BOEM differs from the CAA's mandate for EPA.

We acknowledge BOEM's intent to update its Air Quality Regulatory Program (AQRP) to reflect the EPA's current ambient air quality standards. However, many of the proposed rule provisions mirror those in EPA's industrial air quality permitting programs. EPA's programs are not appropriate for OCS sources and BOEM has no mandate to apply the EPA air programs.

The air quality programs of Interior and EPA are authorized by the 1978 OCSLA and the 1990 CAA, respectively. These Acts differ considerably:

- OCSLA recognizes that the OCS is a "vital national resource" and should be made available for development "subject to environmental safeguards." Interior's mandate under OCSLA, per the preamble to the 1980 rulemaking, is to "regulate OCS activities only if the emissions from the activities have significant effects on onshore air quality."
- The CAA main objective is to regulate air quality and establish standards (NAAQS) to protect human health and safety.

Although Section 328(b) of the CAA requires Interior to "consult with the [EPA] to assure coordination of air pollution control regulation for OCS emissions and emissions in adjacent onshore areas," its authorization to require pollution controls for OCS emissions is still constrained to OCS activities that will significantly affect air quality of a state for purposes of compliance with the NAAQS. This does not allow BOEM to adopt the extensive programs for air pollution control mandated under the CAA, and certainly does not mandate that BOEM adopt broader, more restrictive, or more onerous provisions based on EPA's regulations. Congress acknowledged that BOEM is not required to, and could not, recreate and administer EPA's programs offshore, yet BOEM has randomly selected a number of concepts from EPA's programs and attempts to apply these concepts even more broadly in this more limited context. This has resulted in a proposed rule of cobbled-together concepts that are not only unnecessary to achieve BOEM's mandate, but are not workable for the regulated community or BOEM in the offshore context. Just a few examples of these concepts are:

"Maximum projected emissions", which are akin to EPA's concept of Potential to Emit (PTE) (40 CFR 51.301). While EPA's program looks only at emissions from the stationary source, BOEM proposes a much broader scope that includes "attributed emissions" (emissions from mobile sources) and "consolidated emissions" (which amount to existing, background emissions).

"Attributed emissions" which echo EPA's concept of Secondary Emissions. Again, BOEM's approach is unnecessarily broader by including emissions from MSC and potentially aircraft. EPA, by definition, excludes mobile source emissions in 40 CFR 52.21(b)(18) from Secondary Emissions.

In developing its existing air quality regulatory program, Interior acknowledged that its program should be guided by EPA's program because of EPA's air quality expertise, but should differ because offshore conditions are not the same as those encountered onshore. In the preamble to the 1980 rulemaking, Interior wrote "all OCS sources are external to the areas whose air

quality they may affect, a situation not commonly encountered in EPA's regulatory program. Thus, the Department [Interior] has used only those aspects of EPA's program that are adaptable to the offshore situation.”

In the proposed rule, it appears that BOEM has selected concepts developed by EPA over decades of rulemaking and litigation that were intended to address a distinct mandate to control air pollution from stationary, onshore sources.

There is no compelling reason for additional regulation of OCS emissions. Interior developed an air quality regulatory program that has ensured that emissions from OCS sources do not significantly affect compliance with NAAQS at onshore locations, as discussed below. BOEM needs to conduct a thorough review of how these concepts can or should be implemented for the OCS or whether their application is even necessary to achieve BOEM's mandate.

2.2 BOEM cannot require plans to address air quality assessment criteria other than NAAQS.

A number of proposed rule sections require special consideration of Class I areas or Sensitive Class II areas, or consultation with Federally-recognized Indian tribes or FLMs. However, as discussed in Section 1.2.7, OCSLA authorizes BOEM to regulate OCS activities only for compliance with the NAAQS; BOEM cannot regulate “significant” air quality impacts in and of themselves. BOEM has not provided a sufficient nexus between “sensitive” areas protection and NAAQS compliance to justify these additional proposed requirements. Consequently, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed to the extent they are not directly related to compliance with NAAQS in onshore areas.

As discussed in Section 2.1, OCSLA's requirement for the Secretary of the Interior to consult with the EPA Administrator in the development of its air quality regulations does not require BOEM to adopt the extensive programs for air pollution control that apply to onshore sources under the CAA. In particular, EPA's Prevention of Significant Deterioration (PSD) program introduces a wide range of regulatory criteria that are unnecessary for BOEM to satisfy its mandate to ensure compliance with NAAQS. Consequently, we request that BOEM eliminate all references in the proposed rule to PSD increments and AQRVs (see Appendix A for suggested rule language in redline-strikeout format to assist in revised regulatory text). The criteria we propose to assess “whether activities authorized under [OCSLA] significantly affect the onshore air quality of any state” are presented in Chapter 9.

2.3 BOEM has not demonstrated that offshore activities significantly affect onshore air quality and prevent attainment or maintenance of NAAQS.

As discussed in Section 1.2.2, BOEM lacks the authority to regulate OCS emissions absent a finding that those emissions 1) “significantly” affect the air quality of a state; and (2) interfere with a state's ability to achieve or maintain compliance with the NAAQS. We have examined relevant SIPs, BOEM's own studies and NEPA analyses, and more than 90 modeling analyses in plan submittals and determined there has been no demonstration that OCS sources significantly affect the air quality of a state or a state's ability to comply with the NAAQS.

2.3.1 Review of State Implementation Plans.

SIPs are developed by states to provide a framework for attaining or maintaining their compliance with the NAAQS. Reviews of the existing SIPs for Alaska and states bordering the Gulf of Mexico (Texas, Louisiana, Mississippi, and Alabama) were conducted to determine whether and how they considered OCS emissions. The incorporation of OCS sources within the SIPs were identified as follows:

- The Houston-Galveston-Brazoria ozone SIP includes OCS sources in the attainment demonstrations but focuses the attainment strategy on local industrial sources and motor vehicle NO_x reductions, not on OCS sources.
- The Baton Rouge ozone SIP includes OCS sources in the attainment demonstrations, but the OCS sources were not considered a significant contributor to NAAQS violations. The area is currently proposed for attainment designation.
- The Louisiana sulphur dioxide (SO₂) SIP for St. Bernard parish does not include OCS sources or any other sources more than 20 km from the nonattainment area, and focuses solely on two local onshore industrial facilities to achieve attainment.

Individual state agencies for the affected states listed above were contacted to confirm the findings of the SIP reviews. According to the agencies, OCS-based contributions to onshore pollutant concentrations are small. In all cases, the SIPs indicate that the states responsible for achieving NAAQS compliance do not consider OCS sources to be significant contributors.

2.3.2 OCS NEPA analyses consistently conclude OCS sources do not have a significant effect on onshore air quality.

As discussed in Section 1.2.1, Congress added Section 328(b) to the CAA in 1990, directing the Secretary of the Interior to prepare a study assessing the impacts of OCS sources on ozone and NO₂ nonattainment areas and to consult with the EPA Administrator to determine if additional actions were necessary. The MMS published the Secretary of Interior's report in 1995, concluding that "the contribution of [OCS petroleum development] emission sources on onshore ozone concentrations is small."²³ Following the publication of this report, EPA and MMS did not pursue any further regulatory action to mitigate onshore air quality impacts from OCS sources. The 1995 study was the first of many conducted by Interior evaluating the effect of OCS emissions on onshore air quality.

NEPA documents prepared by MMS and its successor agency, BOEM, assessed whether air quality from OCS sources "significantly affect the air quality of any state." A review of these documents indicates that none of them demonstrated that OCS activities endanger onshore air quality. A list of the reviewed documents and their conclusions is provided below:

- BOEM's Final Programmatic EIS (PEIS) was published in 2012 and addressed the 2012-2017 OCS oil and gas leasing program in the Gulf of Mexico. The 2012-2017 PEIS assesses NO₂, SO₂, particulate matter less than or equal to 2.5 micrometers in diameter (PM_{2.5}), particulate matter less than or equal to 10 micrometers in diameter PM₁₀, carbon

²³ Minerals Management Service, Gulf of Mexico Air Quality Study, Final Report, Volume I, 1995, at <http://www.gomr.boemre.gov/PI/PDFImages/ESPIS/3/3424.pdf>

monoxide (CO), and ozone impacts and concludes that emissions due to the oil and gas leasing program would not result in any exceedance of the NAAQS for these pollutants.

→ The 2012-2017 PEIS included photochemical modeling studies indicating extremely small contributions from existing offshore operations to ozone concentrations at onshore areas where the 75 ppb NAAQS is exceeded. The projected emissions from the 2012-2017 proposed activities were similar to the emissions used in the modelling studies, and the onshore emissions in the nonattainment areas were expected to decrease. As a result, BOEM determined the proposed leasing program would not significantly impact onshore ozone concentrations and that the cumulative impact to ozone nonattainment areas would likely be reduced. These same photochemical modelling results are repeated in BOEM's 2016 Draft Multisale EIS for the 2017-2022 leasing program in the Gulf of Mexico.

- BOEM's Multisale EIS for the 2012-2017 leasing program in the Western and Central Planning Areas of the Gulf of Mexico concluded that each lease sale would have minimal impact to onshore air quality. As required by NEPA, BOEM subsequently reassessed the conclusions of this EIS for each individual lease sale and reaffirmed its original conclusion each time.
- The 2014-2016 Western Planning Area Lease Sale EIS found that "emissions of pollutants into the atmosphere from the routine and accidental activities associated with a WPA [Western Planning Area] proposed action are projected to have minimal impacts to onshore air quality, and emissions of pollutants into the atmosphere from activities associated with the OCS Program are also not projected to have significant effects on onshore air quality."
- The 2015-2017 Central Planning Area Lease Sale EIS found that "emissions of pollutants into the atmosphere from activities associated with the OCS Program are not projected to have significant effects on onshore air quality because of the prevailing atmospheric conditions, emission rates and heights, and the resulting pollutant concentrations."
- BOEM's 2015 Final Second Supplemental EIS for Lease Sale 193 in the U.S. Chukchi Sea evaluated air quality impacts throughout the exploration, development, and production period, concluding that impacts would range from negligible to minor over 77 years. MMS's 2008 Draft EIS for lease sales in the U.S. Beaufort Sea also concluded that air quality impacts would be low.
- The Draft PEIS for BOEM's 2017-2022 leasing program concludes that the direct program will result in minor contributions to criteria pollutant concentrations, that the NAAQS will not be violated, and that the PSD increments will not be exceeded.
- In addition to the NEPA documents discussed above, we reviewed twenty-four EISs and Environmental Assessments published by BOEM (and formerly the MMS) between 2002 and 2015 addressing oil and gas lease sales in the Gulf of Mexico region. None of these documents conclude that oil and gas activities have the potential to endanger onshore air quality.

Outside of the impacts identified by the NEPA documents, BOEM goes further and reiterates over multiple documents that the existing regulations are sufficient. For example, BOEM's 2012-2017 Multisale EIS specifically states that existing regulations are sufficient to prevent adverse onshore air quality impacts (see section 4.1.1.1.2 of the EIS):

Regulations, activity data reporting via the [Gulfwide Offshore Activity Data System] reporting requirement, and mitigation, such as monitoring the performance of the catalytic converter, would ensure [pollutant concentrations] stay within the NAAQS.

The conclusion that existing regulations are sufficient to protect onshore air quality attainment is reiterated in BOEM's 2017-2022 Draft Programmatic EIS:

BOEM and USEPA regulations require mitigations to prevent or reduce impacts in areas defined as nonattainment by USEPA. For operations that do not demonstrate the potential to impact attainment status, existing methods of regulating pollutants by the USEPA and BOEM are expected to maintain USEPA defined attainment statuses. These existing regulations will also prevent the deterioration of air quality in nearby Class I Areas and reduce impacts to Sensitive Class II Areas from oil and gas development.

This long list of BOEM assertions that OCS sources do not significantly affect onshore air quality is offered yet again in the NEPA Environmental Assessment for BOEM's proposed air quality rule.²⁴ On page 17, addressing the No Action Alternative, BOEM states:

There is the potential that OCS emissions affect ozone in the Greater Houston area. On the whole, however, OCS operations have a minimal impact on the air quality onshore.

As indicated above, OCS emissions have modeled onshore impacts in the Houston-Galveston-Brazoria area that constitute a small fraction of the overall ambient ozone concentrations where the associated 8-hr NAAQS is exceeded. However, this does not mean that new regulations for OCS emissions are a necessary measure to prevent ozone exceedances in the Houston area. The Houston-Galveston-Brazoria SIP, most recently updated in 2010, does not identify offshore sources as a significant contributor to nonattainment and does not rely on reductions of offshore emissions to achieve compliance with the ozone NAAQS. In the SIP, Texas's Commission on Environmental Quality (TCEQ) includes MMS's 2005 Gulfwide Emission Inventory as part of its ozone baseline. The SIP also models future projected ozone based on mitigation measures that focus on local mobile emission sources; these modeled projections also use the 2005 Gulfwide Emission Inventory. Thus, the SIP demonstrates that Houston will attain compliance with the ozone NAAQS without new regulations of offshore sources.

2.4 BOEM should not propose new air quality regulations before its scientific air quality studies are completed.

There are several scientific studies being undertaken to improve the understanding of atmospheric dispersion and atmospheric chemistry in the Gulf of Mexico and the Arctic. These include ongoing, comprehensive regional air quality studies in the Gulf of Mexico and the Arctic, and a proposed atmospheric tracer study in the Gulf of Mexico. Additionally, as discussed in Section 8.1, there are some needed upgrades to the Offshore and Coastal Dispersion (OCD) model to facilitate its use in meeting additional requirements proposed in the rule.

²⁴ 81 Federal Register 19718; <https://www.gpo.gov/fdsys/pkg/FR-2016-04-05/pdf/2016-06310.pdf>

Considering the above, BOEM should postpone promulgation of a new air quality regulation until it completes its studies and determines whether OCS emissions significantly affect onshore air quality to the extent that compliance with NAAQS is jeopardized. After the studies are completed, BOEM can update its OCS meteorological and dispersion modeling tools, and establish new emissions exemption thresholds if warranted.

2.4.1 Gulf of Mexico and Arctic Air Quality Studies

BOEM is currently conducting comprehensive multi-year scientific studies assessing the onshore air quality implications of Arctic and Gulf of Mexico OCS emissions. Both studies will evaluate the effect OCS emissions sources have on onshore air quality and will assess existing (and possibly develop new) EETs. The Arctic and Gulf of Mexico studies are scheduled to be completed in December 2017 and August 2017, respectively. Therefore, any rule revisions should be postponed until BOEM completes these studies, updates the OCS meteorological and dispersion modeling tools, establishes the emissions exemption thresholds, and (most importantly) determines whether OCS emissions significantly affect onshore air quality to the extent that compliance with NAAQS is jeopardized.

The purpose of the study focusing on air quality in the Gulf of Mexico and coastal areas²⁵ is two-fold: to support the EIS for the 2017-2022 Lease Block Sales program and to assess existing (and possibly develop new) EETs. In support of the EIS, photochemical grid modeling will be performed using a GOADS emissions database and the National Emissions Inventory to assess cumulative onshore air quality impacts from offshore OCS emissions.

For the EET analysis, emissions from hypothetical OCS sources will be modeled with CALPUFF or AERMOD for sources greater than or less than 50km from the State seaward boundary, respectively. The existing EETs will be evaluated in light of the NAAQS and SILs that have been promulgated since the existing EETs were developed. If modeling demonstrates the existing EETs are not sufficiently protective, new EETs will be developed.

The Arctic study²⁶ also has similar objectives:

- Test the hypothesis that the cumulative impacts from OCS-related activities, exclusive of permitted sources, would not cause a statistically significant impact on Alaska.
- Test the hypothesis that secondary PM_{2.5} and ozone are not significant for cumulative impact analyses.
- Evaluate modelling results to assess the cumulative impact of emissions on the OCS and on the North Slope.
- Apply the results to demonstrate compliance under the NEPA and the CAA for EISs and EAs prepared by BOEM and use the information to evaluate the existing emission exemption equations and, if needed, develop revised exemption equations.

²⁵ Air Quality Modeling in the Gulf of Mexico Region (GM-14-01)

²⁶ Arctic Air Quality Impact Assessment Modeling (AK-13-01)

2.4.2 BOEM's Gulf of Mexico tracer study will further support improved modeling tools.

BOEM's Environmental Studies Program, Studies Development Plan for Fiscal Years 2016-2018 includes a \$1.9 million project to conduct tracer studies in the Gulf of Mexico to better understand the dispersion of air pollutants from offshore sources ("Tracer Experiments for Atmospheric Dispersion Model").²⁷ BOEM's description of the tracer study indicates:

... AERMOD model also will be used to replace the BOEM's OCD air quality model. Furthermore, AERMOD model (EPA) was developed for overland applications. For the Gulf of Mexico, the present data sets are poorly representative of how temperature, winds, and mixing height vary vertically over the atmospheric boundary layer and free troposphere. The existing regulatory air quality models have not been rigorously tested in the marine and coastal environments.

BOEM has ongoing studies, which include "Air Quality Modeling in the Gulf of Mexico Region", to investigate the BOEM's exemption levels and the cumulative impact analysis, and "Enhancing the Capability of a New Meteorological Model for Air Quality and Other BOEM Applications in the Gulf of Mexico". A meteorological field program to collect the meteorological and wave data over the water has also been proposed and described previously. The meteorological model is crucial in the success of the accurate prediction of air concentrations. The accurate wind field generated from a meteorological model is needed for the transport of air pollutants and the meteorological data is also needed in the derivation of the dispersion parameters needed for air quality modeling.

Objectives: This study is a major tracer field campaign to obtain independent air concentration dataset for air quality model verification, especially in the coastal areas. The collected data can be used to derive the dispersion parameters needed for dispersion modeling. The information obtained from the meteorological measurements is crucial in understanding the atmospheric process, characterizing the structure of the atmospheric boundary layer, and the derivation of the dispersion parameters needed for air quality modeling.

We applaud BOEM's efforts and objectives, both in its ongoing and planned studies, to advance the scientific understanding of OCS atmospheric chemistry and dispersion mechanisms. BOEM has recognized that it needs additional data and improved modeling tools in order to more accurately assess air quality consequences of OCS activity. As such, any rulemaking should be deferred until BOEM completes its regional modeling analyses to determine if, or to what extent OCS sources affect compliance with NAAQS onshore, because the current state of the science indicates that the OCS sources do not impact the onshore areas' attainment status.

2.5 BOEM's proposed rule contains many incomplete or undeveloped provisions, precluding meaningful assessment of rule impacts.

In many instances, the provisions of the proposed rule appear to be incomplete or premature. BOEM has specifically solicited comments on approximately forty issues in the proposed rule

²⁷ <http://www.boem.gov/FY-2016-2018-SDP/>, pp.241-242

that have not been fully developed or defined. Appendix C provides responses to each of BOEM's requests for comment.

Many of the issues that are undeveloped are critical components of the air quality regulatory program, and may have significant impact to the regulated community. Without fully developed answers to these issues, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment.

The following are a selection of noteworthy examples:

- In the preamble, BOEM proposes to require measurement of actual emissions on facilities with emissions above "a specific threshold," and requests comment on what that threshold should be in the final rule. (81 Fed. Reg. 19746).
- Proposed § 550.311(b)(2) states "BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment." This provision does not specify what sources are required to have emissions monitoring systems; it simply indicates that BOEM is considering alternatives. Because BOEM has not indicated a specific compliance option, it is impossible to assess the need for and impact of this proposed requirement.
- In § 550.303(c)(3), BOEM proposes to implement new proposed EETs in the Federal Register without a separate rulemaking. BOEM has included a range of EETs within which BOEM may establish updated EETs for each pollutant. However, in the preamble, BOEM states that new EETs are not being proposed in this proposed rule because the scientific basis for determining the potential impacts on the States of OCS emissions have not yet been established. (81 Fed. Reg. 19741).
- In the preamble, BOEM seeks comments on how to attribute emissions from mobile sources to the appropriate facility. (81 Fed. Reg. 19737).
- In the preamble, BOEM solicits comments on the proposed new Air Quality Emissions Reporting (AQR) forms, in terms of their usefulness, readability, complexity and completeness. (81 Fed. Reg. 19759). However, the provided forms, available in the proposed rule docket on www.regulations.gov, are incomplete and do not align with the proposed rule requirements.
- In the preamble, BOEM states that the classification of short-term facility may potentially change based on public comment. (81 Fed. Reg. 19769).

Actions such as establishing emission exemption thresholds, defining the scope of emissions to be evaluated under the air quality regulatory program, and setting requirements for emissions measurement and monitoring systems are critically-important quasi-legislative exercises to support rulemaking. BOEM must publish a revised proposed rule that addresses these critical components with sufficient specificity to facilitate meaningful stakeholder comment. To do otherwise would potentially violate the APA.

2.6 BOEM's stated intent in the preamble does not align with many of the proposed rule provisions.

There are many instances in which BOEM's proposed intent, as described in the preamble, differs from the language of the proposed rule. Some of the discrepancies are for critical compliance requirements. For example:

- In the preamble, BOEM states that an ERM analysis for a short-term facility should address only non-best available control technology (BACT) ERM, unless BOEM requires BACT control measures to address any affected nonattainment area or BOEM determines projected emissions may cause a NAAQS to be exceeded. (81 Fed. Reg. 19778). However, the short-term facility ERM analysis requirement presented in § 550.306 does not indicate that such an ERM analysis is limited to only non-BACT control measures.
- When the control of emissions from a long-term facility is required, BOEM states in the preamble that a lessee or operator with emissions that affect any nonattainment area must perform modelling using revised projected emissions after the application of applicable ERM, including BACT, and compare the results of this modelling to relevant SILs, with no additional modelling required once the modelling results are below all relevant SILs. (81 Fed. Reg. 19780). Section 550.307(b)(2) requires the same facility to perform that same SIL analysis modelling, but then the facility must also perform NAAQS analysis modelling and further ERM evaluation, as required.
- BOEM states that a lessee or operator with a plan that is approved subject to the application of BACT must ensure that the emissions associated with each emissions source for which BACT is required complies with the emissions verification requirements of § 550.311. (81 Fed. Reg. 19781). However, § 550.309(d)(1) requires a lessee or operator to ensure that the emissions associated with each emissions source for which ERM (not just BACT), is required, to comply with the emissions verification requirements of § 550.311. Furthermore, § 550.311(b)(1) requires that the “measurement of actual emissions must include enough of your emissions sources to ensure that the actual emissions ...are consistent with the projected emissions approved for your plan.” And that the operator must “consider “every source” not just the emissions source for which BACT is required.
- In the preamble, BOEM states that the “rule proposes to codify the existing mechanism BOEM uses in the Gulf of Mexico OCS Region to report ongoing emissions information (i.e., the GOADS, as described in [NTL, BOEM NTL No. 2014–G01] and apply it to all OCS regions under BOEM air quality jurisdiction.” (81 Fed. Reg. 19722). However, proposed § 550.187 expands the requirements significantly, including requiring operators to submit “facility and equipment usage, including hours of operation at each percent of capacity for each emissions source” and “monthly and annual fuel consumption showing the quantity, type, and sulphur content of fuel used for each emissions source.”
- In the preamble, BOEM states that under “the proposed rule, any reduction in emissions that is accomplished within the same EPA AQCR would be an acceptable emissions credit.” (81 Fed. Reg. 19741). However, § 550.309 requires that the emissions credits must “affect the air quality of the same AQCR.”

2.7 Extension of comment period and final rule deadline.

While we appreciate the additional 14-day extension to the comment period, a minimum of 180 days was required to fully analyze the potential impacts of the proposed changes and provide constructive comments on this broad, high impact, and complex rulemaking. Because there was not an Advance Notice of Proposed Rulemaking (ANPRM), the regulated community did not have an opportunity to supply information on technical and operational issues that may impact the feasibility of BOEM’s proposed significant changes. Furthermore, as discussed above,

BOEM solicited comments on approximately forty specific issues that require careful consideration and analysis.

A minimum of 180 days was needed to ensure rigorous stakeholder engagement such as conducting thorough technical and cost analyses, as well as providing the information requested in the proposed rule. However, we have developed as complete a set of comments as time constraints allowed.

2.8 BOEM must provide adequate time to comply with the final rule.

The changes proposed in this rulemaking are significant and will require time for operators and BOEM staff to understand and implement. Therefore, it is critical that a phase-in period be incorporated into the implementation of any final rule. This additional time is justified because the new requirements were not published as an ANPRM which would have allowed more time for public comment and industry preparation, and allowed for more time for the development of compliance programs.

If promulgated as written, the final rule would significantly increase recordkeeping and reporting requirements, and would require installation of meters, monitoring systems, and control technologies. In addition, as discussed in Section 2.5, because many of the rule provisions are undeveloped, it is impossible to determine what the compliance requirements and implications would be at this time.

BOEM must establish a compliance timeline following the effective date of the regulation for designated operators and BOEM staff to develop compliance programs to meet the requirements of the final rule. The compliance timeline must account for the number of affected facilities and the associated engineering, implementation and training needed to comply with the new rules.

3 Mobile Support Craft

Under BOEM's proposed revisions, plans would require the inclusion of extensive information about support vessels (MSC) and vessel emissions would be included in the exemption determination and in modeling analyses. It is not clear if emission sources on support vessels would be subject to ERM.

Section 1.2.4 of our comments explains that BOEM cannot consider MSC emissions when determining whether "activities authorized under [OCSLA] significantly affect the air quality of [a] [s]tate" because MSC are not "activities authorized under [OCSLA]."

We concur with Interior's position in the preamble to the 1980 rulemaking that support vessels are not part of a facility if they are not physically attached to a drillship or to an installation that is attached to the seabed and used to transfer production:

vessels used to transfer production away from a facility on the OCS shall be considered part of the facility for the entire period of time that the vessel is moored or otherwise physically attached to the facility. Thus, for purposes of calculating the total emissions, all emissions from such a vessel must be treated as emissions from a source on the facility during that period in which the vessel is physically attached to the facility. Sources on support vessels other than vessels used to transfer production from a facility will not be considered part of the facility." [45 Fed. Reg. No. 47 15135]

In other words, the production transfer vessel ceases to be a "vessel," and is subsumed in a BOEM-authorized "facility" while attached to it and engaged in "producing" OCS resources. See 43 U.S.C. § 1333(a). For similar reasons, a MODU drilling into the seabed ceases to be a "vessel" on the high seas, beyond BOEM jurisdiction, and becomes a BOEM-authorized "facility" when it attaches to the seabed and is "exploring for" OCS resources. *Id.* MSC, on the other hand, which are simply vessels on the high seas (or aircraft in the air), are not attached to the seabed for the purposes of exploring for, developing, or producing OCS, and therefore do not require BOEM "authorization." This precludes them from being subject to any regulatory requirement BOEM establishes under section 5(a)(8) of OCSLA. There are also a number of practical considerations that preclude effective regulation of MSC, as outlined in Section 3.2 below.

For the reasons outlined in this section, we request that BOEM eliminate all rule provisions that require MSC emissions to be accounted for or attributed to a facility. MSC emissions, whether those directly related to a plan or those attributed to a proximate facility, should not be included in comparisons with the EET and should not be included in the modeling analyses.

3.1 It has not been demonstrated that MSC emissions significantly affect onshore air quality.

As discussed in detail in Section 2.4.1, BOEM is currently conducting a multi-year evaluation of Gulf of Mexico offshore emissions and onshore consequences. BOEM's study will support an EIS for an upcoming lease block sales program but is also expected to provide the technical basis for changes to the EETs. The study will consider more than 2,000 offshore installations and related MSC.

This is not the first such study, but it is one of the most comprehensive. To the best of our knowledge, neither BOEM nor any state agency has determined that MSC are a significant contributor to onshore air pollutant concentrations, and thus their own findings do not support the regulation of support vessels. In fact, as shown in Sections 1.1 and 2.3, BOEM has repeatedly asserted in its own documents that OCS sources have a minimal effect on onshore air quality and the MSC emissions are a small fraction of the total OCS sources, showing them to be an insignificant contributor. Given OCSLA's directive that BOEM only regulate offshore facilities to the extent that they affect compliance with the NAAQS onshore, it is unreasonable to propose regulations on MSC.

3.2 It is not practical to quantify emissions from MSC.

Proposed § 550.205 identifies information that must be submitted with EPs, DPPs, DOCDs, or applications for a RUE, pipeline ROW, or lease term pipeline. The section requires plans to include "the following criteria air pollutant and major precursor air pollutant emissions information:

(a) Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan....

(1) For each emissions source, you must identify, to the extent practicable:

(i) Equipment type and number, manufacturer, make and model, location, purpose (i.e., the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics;

(ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and

(iii) The frequency and duration of the proposed use.

(2) For every engine on each facility, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest maximum rated capacity for the type of engine which you will use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.

(3) For engines on MSC, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available,

indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.

This is an extraordinary information demand, and virtually impossible to fulfill at the time a plan is being developed. If BOEM proceeds with this language, it will be overwhelmed with engine data on every MSC in a lessee's fleet of contracted vessels – data of minimal practical utility. Furthermore, plans will have to be constantly updated to account for changes in the lessee's fleet (which occur frequently).

More importantly, BOEM's proposed regulation is asking for information that is not likely to be known at the time of application. Operators of offshore leases typically contract with offshore support companies to provide supplies, oil spill response capabilities, ice management (in the Alaska OCS), and other services. At the time of submittal of an EP, DPP, or DOCD, the designated operator may not have selected a contractor to provide those services. Even if the contractor has been selected, neither the operator nor the contractor are likely to know which support vessel will be used to provide the service. And even if the contractor were selected and knew which vessel would likely initiate service to a facility, another vessel may be substituted. Consequently, it is simply not feasible to accurately quantify emissions from supply vessels at the time of application.

BOEM should continue its current practice by which the lessee describes the support vessels in plan documents, but exclude any information for MSC related to air emissions.

3.3 It is not practical to accurately apportion MSC emissions to a planned facility.

Proposed § 550.205(d) of BOEM's proposed rule requires applicants to "attribute" a share of MSC emissions to the facility when determining exemption and when conducting dispersion modeling assessments.

(d) Attributed emissions. For each criteria and major precursor air pollutant, calculate the attributed projected annual emissions for each of your MSCs, the maximum 12-month rolling sum of each MSC's emissions, and the maximum projected peak hourly emissions for each MSC...

This section goes on to prescribe procedures to calculate emissions from MSC from the time an MSC leaves port until the time it returns to port, and indicates applicants may attribute some of the emissions to other facilities.

As noted above, operators of offshore facilities typically retain offshore support companies to provide supplies, oil spill response capabilities, and other services. At the time of submittal of an EP, DPP, or DOCD, the designated operator may not know which company will be selected to provide those services. Even if the contractor has been selected, neither the operator nor the contractor are likely to know which support vessel will be used to provide the service. In

addition, neither the contractor nor the applicant will know at the time of application how many other OCS facilities will be serviced by the same support vessel. Even after operations have begun, the support vessel route is likely to change with the varying customer requirements and weather. Consequently, it is simply not feasible to accurately attribute emissions from supply vessels at the time of application.

Furthermore, collection of emissions information for mobile sources provides no indication of onshore impact unless the emissions are associated with a specific location. Just as the position of a platform must be known before one can model the onshore effect of its emissions, the location of a vessel determines its potential effect on onshore air quality. But the course a vessel will travel is impossible to predict during development of plans.

No method currently exists to accurately attribute emissions from mobile sources to the appropriate facility and we do not believe it is necessary to do so. Although BOEM requested comment on “methods that more accurately attribute emissions from mobile sources to the appropriate facility”, BOEM lacks authority to regulate vessels and we object to BOEM’s proposal to include emissions from MSC “regardless of proximity but only to the extent related to the applicant’s operations.”

3.4 Other programs regulate emissions from MSC.

It is not clear if the proposed rule would require emission controls on MSC. However, as referenced in Sections 1.2.4 and 3.1, BOEM lacks the authority to regulate MSC. Further, there are already programs in place to regulate emissions from MSC.

The International Maritime Organization (IMO) is the United Nations agency concerned with maritime safety and security and the prevention of marine pollution from ships. The international air pollution standards are found in Annex VI to the International Convention on the Prevention of Pollution from Ships (MARPOL Annex VI). Under MARPOL Annex VI, all US and foreign vessels of any type (including MODUs, floating drilling rigs, and other platforms) operating within the North American Emission Control Area (ECA) must comply with the requirements of Annex VI, except as explicitly excluded, including the following:

- Emissions to air from ships in US waters are subject to the requirements of the North American and US Caribbean Sea ECAs.
- Sulphur oxides (SO_x) and particulate matter emissions are limited through fuel oil sulfur limits that apply to all vessels.
- The nitrogen oxides (NO_x) control requirements of Annex VI apply to marine diesel engines greater than 130 kW output power that are installed on a vessel constructed after January 1, 2000 or have undergone a major conversion on or after January 1, 2000.
- Under MARPOL Annex VI, any ship of 400 gross tons and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties, and platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties must carry an International Air Pollution Prevention Certificate (IAPPC) and Engine International Air Pollution Prevention Certificates (EIAPPC) to demonstrate that

they have been approved by their Flag Administration to meet the international limits for air emissions from ships, including SO_x and NO_x.

- There are accepted mechanisms for Coastal State Administrations to check compliance with the IAPPC and EIAPPC(s), and BOEM should recognize these without imposing additional burdens on the regulated community.

In fact, BOEM's proposals for MSC could threaten to undermine or contradict regulations that other US agencies with jurisdiction for vessel emissions have already freely entered into. For example, the proposed regulations seem to conflate two distinct and separate issues: emissions of SO_x and emissions of NO_x.

SO_x emissions are a product of fuel sulphur content and are not an engine certification matter. Emissions of NO_x, however, are an engine certification matter, and marine engines are tested with a reference fuel. The emission factors for engines are approved in accordance with test cycles defined in the NO_x Technical Code. The means of SO_x compliance for ships subject to MARPOL VI is stated on the IAPPC and are approved in accordance with IMO guidelines such as MEPC Resolution 259(68). NO_x emissions are the subject of the EIAPPC, which is then used to endorse the IAPPC.

Under BOEM's proposal, however, the fuel sulphur content used for engine testing would form part of the engine approval. This would represent a major deviation from the IMO NO_x Technical Code requirements, and would create difficulties in terms of demonstrating compliance.

With the IMO programs in place, the gradual replacement of engines and ships will reduce emissions without additional regulation by BOEM. We note that MARPOL Annex VI regulation is analogous to how onshore mobile sources are regulated. For example, refinery permit applications do not need to include in a permit application emissions from trucks delivering supplies to a refinery or carrying refined fuel from a refinery. Likewise, a lumber mill permit does not limit emissions or require emissions controls on a railroad locomotive hauling product. In both cases, other regulatory programs address emissions from transportation sources (i.e., the Federal Railroad Administration, and EPA motor vehicle emissions programs).

In addition, EPA establishes standards for marine engines for US registered or flagged vessels (provided in 40 CFR parts 94 and 1042). Ships that are not US flagged vessels are not subject to EPA marine engine regulations but are subject to the MARPOL Annex VI regulations when operating in the ECA.

EPA has established emission limits for marine engines installed on US flagged vessels as part of its strategy to reduce marine vessel emissions in accordance with MARPOL Annex VI. The ECA and other requirements of MARPOL Annex VI are implemented in the US through regulations adopted under the Act to Prevent Pollution from Ships (APPS), provided in 40 CFR part 1043. Part 1043 requires that non-emergency engines greater than 130 kW installed or reconstructed on vessels after January 1, 2000 must be covered by a valid EIAPP certificate issued by EPA. Manufacturers of engines to be installed on U.S. vessels subject to this part must obtain an EIAPP certificate for an engine prior to it being installed in a vessel. Owners of US flagged vessels must keep records related to NO_x standards and in-use fuel specifications

such as the Technical File, the Engine Book of Record Parameters, and bunker delivery notes as required under MARPOL Annex VI.

Finally, EPA establishes regulations governing sulfur contents in the highway diesel fuel, fuel used in nonroad equipment and locomotive, and marine (NRLM) diesel fuel (provided in 40 CFR part 80). For NRLM diesel fuel, the EPA regulations have substantially reduced the sulfur content of the fuel and, thus, the potential SO_x emissions associated with its use. For example, since June 1, 2012, the maximum sulfur content for NRLM diesel fuel for most applications is 15 ppm, which was a substantial reduction from the 500 ppm standard that was introduced five years prior. These changes occurred without new emission reduction requirements from BOEM.

Therefore, BOEM's air quality rules should not include any requirements for vessels subject to IMO and EPA requirements.

3.5 Oil spill response vessels remain in port in the Gulf of Mexico.

The definition of MSC in proposed § 550.105 includes oil spill response vessels (OSRVs). Pursuant to § 550.205, all MSC must be identified in the plan and emissions would be calculated as part of attributed emissions. However, in the Gulf of Mexico, OSRVs are stationed at ports along the Gulf Coast and used only when needed (e.g. when a spill occurs).

We request that all provisions related to attributing vessel emissions to a facility and requiring modeling analyses of vessels be removed from the rule. However, if BOEM proceeds with the requirements to regulate MSC, despite the lack of authority to do so, BOEM should clarify how emissions from an OSRV should be accounted for in a plan when it is unknown whether an OSRV will be required over the facility planning period.

4 Consolidation of Facilities

Section 550.303(d) of the proposed rule addresses consolidation of air pollutant emissions from multiple facilities:

1) *You must report the projected emissions from multiple facilities which may have been or are described in multiple plans, as the complex total emissions for your plan, if:*

(i) The air pollutant emissions are generated by proximate activities (i.e., the same well(s); a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, by facilities located within one nautical mile of one another); and

(ii) You wholly or partially own, control or operate those facilities; in the event of a dispute as to what constitutes common ownership, control or operations, BOEM will make a determination by reference to the ONRR criteria defined in 30 CFR 1206.101 and 1206.151; and

(iii) The construction, installation, drilling, operation, or decommissioning of any of your facilities occurs within a contemporaneous 12-month period as the construction, installation, drilling operation, or decommissioning of any other facility; and

(iv) Such a consolidation of emissions from multiple facilities would generate emissions sufficient to exceed an applicable emission exemption threshold (based on the exemption review described in paragraphs (e) or (f) of this section).

(2) If any two or more facilities meet all of the conditions specified in (d)(1)(i) through (iii) of this section, you must calculate the sum of the projected emissions from those facilities (including their respective attributed emissions) as the complex total emissions for your plan.

Subject to these applicability criteria, the proposed revisions would require facility plans to include substantial information regarding “proximate” existing facilities. Not only must plans include detailed operational and emissions information about these existing facilities, emissions from the proximate facilities and attributed emissions from their MSC must be included for comparison with EETs. The combined effect of consolidating facilities and including MSC emissions for comparison with an expanded list of EETs will be that plans are far more likely to exceed EETs, thereby triggering extensive modeling and ERM evaluations. The cost implications of the proposed rule are discussed in Appendix B.

BOEM has yet to demonstrate that consolidating emissions from distant OCS facilities is needed to protect onshore ambient air quality. The only justification for this extraordinary expansion of the AGRP is that it would ensure projects are not segmented to avoid modeling and ERM requirements. However, the proposed rule has consequences that go far beyond its purported intent.

We believe there are significant legal questions and extremely challenging applicability and implementation issues associated with this proposal, and that the existing rules adequately

ensure projects are not artificially segmented. Furthermore, as discussed below, cumulative impacts are already assessed if new facilities add model-predicted concentrations to measured background values (which include the contributions from existing facilities). We request that BOEM eliminate all proposed provisions regarding aggregation of new facilities with previously permitted facilities.

4.1 BOEM's existing regulations adequately address cumulative impacts.

When emissions from proposed facilities exceed EETs, BOEM's proposed modeling procedure requires applicants to apply approved air quality models to calculate onshore concentrations attributable to the proposed facility. To demonstrate compliance with NAAQS, modeled concentrations are added to existing "background" concentrations to determine cumulative concentrations. This simple procedure accounts for emissions from existing OCS and onshore facilities as part of the background concentration, and provides the cumulative impact analysis BOEM seeks. This procedure is routinely applied in onshore permit applications. BOEM's proposal to consolidate OCS facilities unnecessarily complicates this procedure.

The preamble to the proposed rule states the concept of consolidating facilities is intended to "prevent a single entity from segmenting its operations into multiple plans to avoid exceeding EETs." Presumably, consolidating facilities is designed to ensure that the cumulative impacts of related projects are evaluated. However, BOEM already has procedures in place to examine unusual situations. In the preamble to the 1980 rulemaking, Interior recognized that "in certain infrequent instances, it is possible for emissions from OCS sources to interact in such a way as to increase notably onshore ambient air concentrations of pollutants." [45 Fed. Reg. No. 47 15135] As a result, the current AQRP includes provisions for cumulative impact assessment when there is information to suggest significant onshore impacts:

in the judgment of the Regional Supervisor, that projected emissions from an otherwise exempt facility will, either individually or in combination with other facilities in the area, significantly affect the air quality of an onshore area, then the Regional Supervisor shall require the lessee to submit additional information to determine whether emission control measures are necessary. The lessee shall be given the opportunity to present information to the Regional Supervisor which demonstrates that the exempt facility is not significantly affecting the air quality of an onshore area of the State." [30 CFR § 550.303(j) and § 550.304(f)]

When this was written, it was the position of Interior that "the incorporation of these provisions insures that cumulative impacts of OCS facilities on the air quality of onshore areas will be identified and effectively controlled." We believe that position remains true.

Given that cumulative effects of multiple facilities would rarely, if at all, significantly affect onshore air quality such that compliance or continued attainment of the NAAQS is threatened, the exemption screening and significance procedures should be conducted for a single facility; only when there is clear evidence or reasoning that demonstrates that multiple facilities, in combination, are significantly affecting onshore air, should additional analysis be conducted. To provide further clarity as to which facilities BOEM will consider in a cumulative analysis, we propose specific revisions to current § 550.303(j) (see our proposed § 550.303(i) in Appendix

A). Our revisions propose that BOEM include only facilities for which the lessee is the designated operator, that are within the 500 meter USCG safety zone of the otherwise exempt facility, and that share certain (specified) production equipment.

Our proposed revisions provide BOEM the ability to gather the information necessary to meet its mandate to determine whether OCS activities it approves will significantly impact the air quality of a coastal area such that emission control measures may be necessary for compliance with the NAAQS.

Furthermore, BOEM's EIS requirements of current 30 CFR § 550.227 require a cumulative analysis for identified resources, including air quality, to demonstrate compliance with NEPA. Together, the Regional Supervisor's narrowly tailored discretion to require cumulative analyses and BOEM's NEPA regulation provide sufficient authority for BOEM to protect onshore air quality from potential cumulative effects from OCS activities.

4.2 BOEM's proposed criteria for consolidation of "proximate" facilities with "common" ownership are arbitrary and impractical.

As discussed in Section 1.4, OCS leases frequently have numerous fractional interest owners with varying degrees of control (or no control at all) over operations. Accordingly, BOEM cannot assume "common" ownership equates with "common" control on the OCS. Nonetheless, the proposed rule requires that a plan include extensive information, including emissions and operational data that may be confidential, about existing facilities that are to be consolidated with a proposed facility.

Furthermore, in some areas of the Gulf of Mexico a "daisy chain" effect may potentially require a significant number of facilities across multiple lease blocks to be consolidated into a single complex. The likelihood of this happening will depend on the specificity of the ownership and distance criteria, which have yet to be resolved. Other criteria could also contribute to a daisy chain effect:

- The definition of proximate activities in proposed § 550.303 introduces the concept of a common reservoir. Using a "common reservoir" criterion for consolidating facility emissions subjects designated operators to dynamic and changing criteria. Furthermore, there is no demonstrated nexus between geophysical conditions below the surface of the seafloor and onshore air quality impacts that justifies consolidation based on a common reservoir. Additionally, this classification discloses confidential information to the general public (based on common reservoir boundaries). The public version of plans exempts submittal of reservoir and geological data.
- The definition of "facility" in proposed § 550.302 introduces the concept that a facility includes all BOEM-regulated pipelines and activities connected to such pipeline. This implies all facilities connected to a common BOEM-regulated pipeline could be considered a single facility for air quality regulatory purposes. It is not clear how consolidation of multiple facilities across multiple lease blocks would be incorporated into a single plan, especially where there are multiple operators.

To illustrate the potential complexities of BOEM's consolidation proposal, we present two figures illustrating facility locations in the Gulf of Mexico as presented in the 2011 Gulf Emission

Inventory.²⁸ In Figure 1, the single facility at the center of the circle with a one mile radius could potentially be consolidated with 69 other facilities. Figure 2 demonstrates the potential daisy chain effect by including circles of one mile radius for each of these 69 facilities. Together, these figures demonstrate that, aside from the fact that consolidation of facilities is unnecessary, consolidating facilities within a one mile radius of each other could be impractical and unworkable from a data-gathering and plan approval perspective.

4.3 The implications of consolidation of existing facilities are not identified.

Under the proposed rule, a proposed facility would potentially be required to identify emissions from multiple facilities (and their associated MSC) and to address the aggregated emissions in an EP, DPP, or DOCD. However, implications of consolidations for the existing facilities is not clear. Per proposed § 550.303(d)(4), if a designated operator is required to consolidate multiple facilities, then anywhere a requirement applies to “projected emissions” it would instead apply to “complex total emissions.”

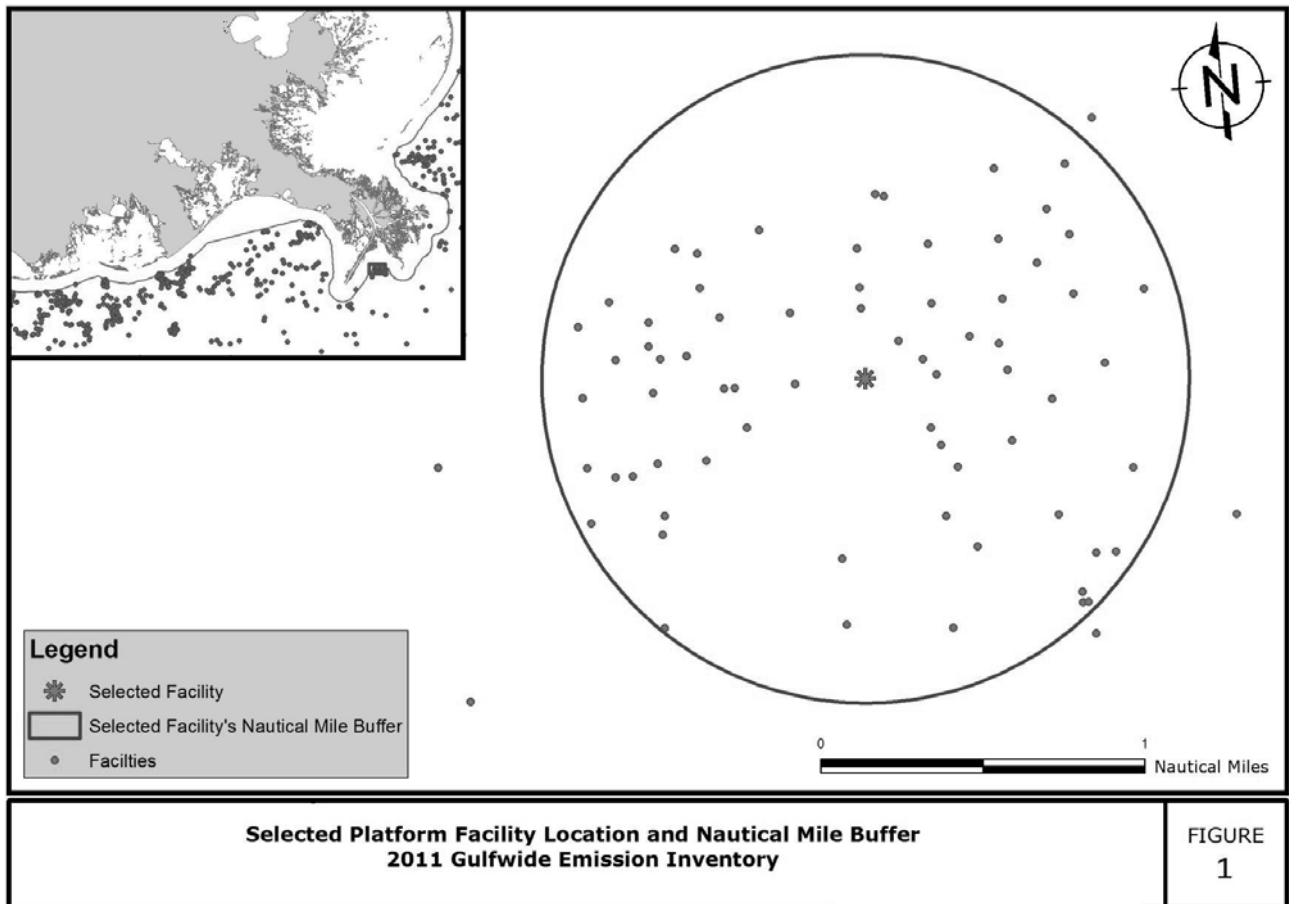
If emissions from the proposed facility do not cause onshore concentrations that exceed a SIL but emissions from the consolidated facility do, it is not clear whether the new facility, the existing facility, or both would implement ERMs. The proposed text in § 550.306(5) refers to selecting reasonable operational controls to “limit your facility’s projected emissions to the greatest practicable extent.” Section 550.307(a), states that “you must apply ERM for the facility.” This would suggest that ERM is only required for the facility described in the plan.

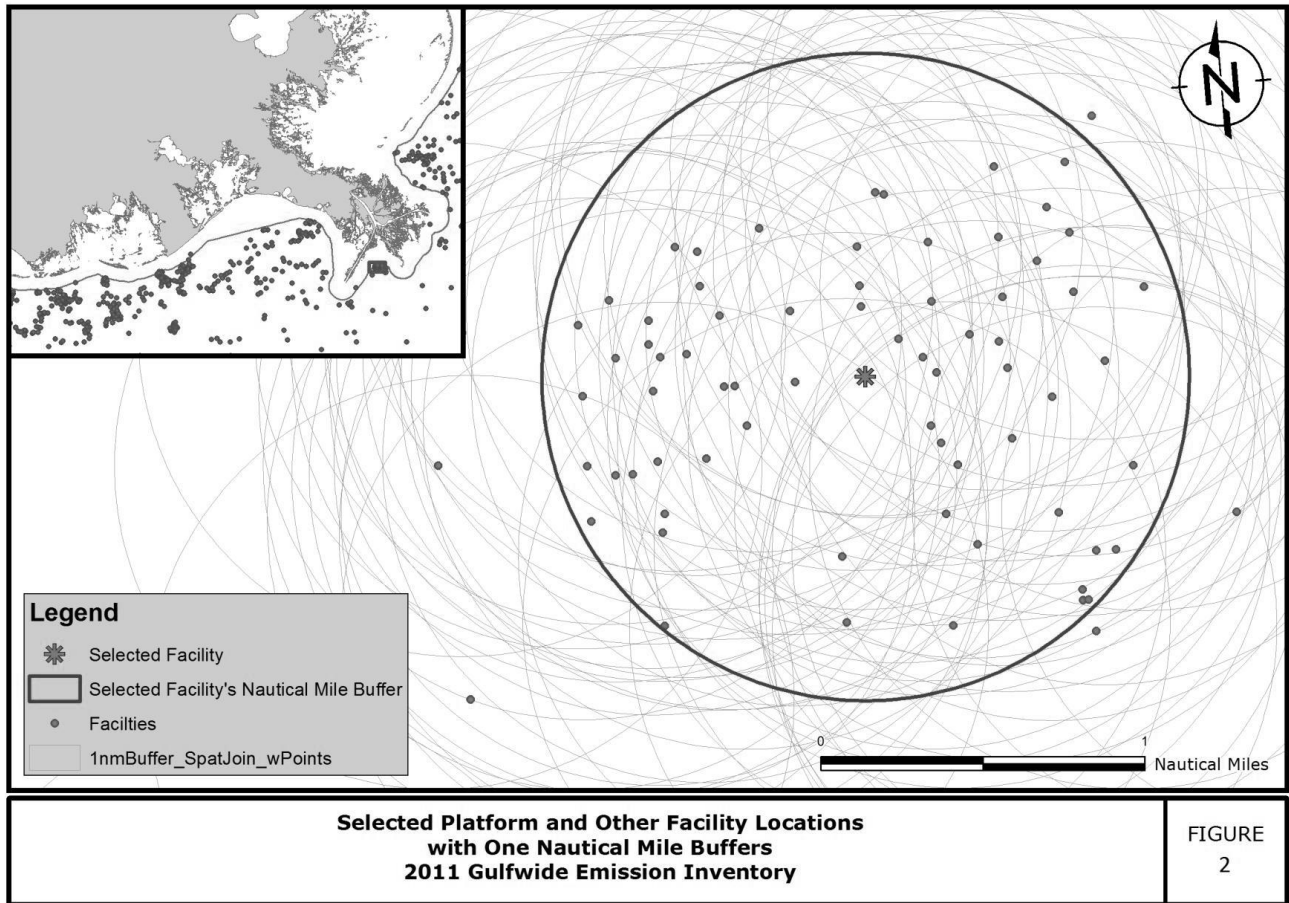
However, proposed § 550.306(b)(2) requires a description of “your revised projected emissions (or complex total emissions, where applicable), taking into account your selected operational controls or replacement(s) of equipment” and §§ 550.307(b)(1)(iv) and (b)(2) refer to reducing “your projected emissions” to meet the AAIs and “demonstrating “that all projected emissions have been fully reduced so that no SIL is exceeded.” Consequently, it appears these sections will require designated operators to assess and implement ERM on existing facilities that are already operating according to approved plans.

Similarly, if a complex of facilities is operating under an approved DOCD or DPP and near field exploration is proposed, it is not clear if the introduction of a MODU into the complex area would trigger a revision to the DOCD or DPPs or the requirements for the existing facilities to demonstrate compliance with current NAAQS.

In summary, we request that BOEM revise the proposed rule to eliminate all suggestion of consolidation of proximate facilities and focus plan approval on the proposed facility. However, we support retaining the narrowly tailored discretion of the Regional Supervisor to require a cumulative analysis subject to the conditions specified in our proposed § 550.303(i) (see Appendix A).

²⁸ Wilson, D., R. Billings, R. Chang, H. Perez, and J. Sellers. 2014. *Year 2011 Gulfwide emissions inventory study*. US Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2014-666.





5 Facility Definition

The proposed rule modifies the current definition of “facility” in the regulations. In addition, BOEM proposes to add several definitions to the rule, including “complex total emissions,” “proximate activities,” “projected emissions,” and “attributed emissions.” Through these definitions, BOEM would not only treat activities that had previously been treated as separate as “one facility”, but also would require groups of separate facilities to be evaluated together (e.g., if they are located near one another), even though they are in fact separate facilities. If EETs are exceeded based on the emissions of any facility or the combined facilities, the impacts would need to be addressed for either an existing facility undergoing a plan resubmission or for a new plan to go forward.

The proposed addition of these new concepts and the changes to the definition of “facility” should not be adopted because they: (1) exceed BOEM’s authority under OCSLA, and (2) inappropriately broaden the common-sense notion of the types of activities that are subject to BOEM’s air quality regulatory jurisdictions by inappropriately combining distinct facilities. In total, these proposals would create tremendous uncertainty regarding how these terms will be interpreted and applied over time.

Although the beginning of the proposed definition seems to establish a somewhat discrete boundary for the facility that a regulated entity would be able to apply in practice and would create replicable results from plan to plan, the additional inclusion of all installations, structures, vessels, vehicles, equipment, or devices “*while dependent on, or affecting the processes of*” the facility is vague and open to unguided and subjective interpretation. Furthermore, the final sentence also expands the scope of the term “facility” well beyond an easily understood, discrete boundary.

BOEM should limit the scope of the term “facility” to clearly defined boundaries within the scope of BOEM’s authority. Otherwise, companies could be required to account for emissions that are difficult to identify and model and “address” those emissions for continued operation or before a project could go forward. This level of uncertainty is unworkable in the context of drilling operations and could subject operators to ad hoc and potentially inconsistent determinations by BOEM, which could evolve over time.

Accordingly, BOEM should not include these additional emissions in “complex total emissions” and should delete reference to “facilities” (plural) throughout these definitions. Only the “facility” (as defined below) emissions should be included in the analysis.

Joint trades’ proposed definition of “Facility” – Section 550.302:

Facility means, any installation, structure, ~~vessel, vehicle,~~ equipment, or device that is temporarily or permanently attached to the seabed of the OCS for the purpose of exploring for, developing, or producing oil or gas or sulphur therefrom, and which emits a regulated criteria or precursor pollutant, including but not limited to a dynamically positioned ship, gravity-based structure, manmade island, or bottom-sitting structure, whether used for the exploration, development, production or transportation of oil, gas, or sulphur. ~~All installations, structures, vessels, vehicles~~ equipment, or devices directly associated with

~~the construction, installation, and implementation of a the facility are a part of a facility only while located at the same site, attached, or interconnected by one or more bridges or walkways, or while dependent on, or affecting the processes of, the facility, including any ROV attached to the facility. One facility may include multiple drill rigs, drilling units, vessels, platforms, installations, devices, and pieces of equipment. Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the "tender assist" mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels-, while temporarily or permanently attached to the seabed and exploring for, developing, or producing oil and gas or sulphur resources. Facilities also include all Floating Production Systems (FPSs), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars, while temporarily or permanently attached to the seabed. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.~~

6 Emission Exemption Thresholds

After BOEM studies in the Gulf of Mexico and Alaska are completed, BOEM proposes to revise the EETs. The proposed rule establishes a range with the “maximum” potential EETs stated in § 550.303(c)(3)(ii) and the minimum potential EETs in Table 1 of § 550.303. The maximum EETs are the same as the existing EETs except the distance used is from the state seaward boundary not the shoreline.

6.1 BOEM’s proposed regulation is premature because it attempts to define a range for exemption criteria before the necessary scientific bases have been established.

As discussed below, in this chapter, BOEM should not constrain future EET values by including a range in the rule. BOEM should not finalize emissions exemption threshold ranges prior to completing its scientific studies.

As discussed in greater detail in Section 2.4.1, there are several scientific studies being undertaken to improve the understanding of atmospheric dispersion in the Gulf of Mexico and to determine the effect of OCS emissions on onshore air quality in Alaska and the Gulf of Mexico. Although BOEM acknowledges that studies are underway that will inform the selection of EETs, BOEM’s rulemaking identifies a range of possible EETs that will constrain the ultimate decision.

In its Initial Regulatory Impact Analysis (IRIA), BOEM states on page 64 that waiting until the scientific studies are completed

would make it more difficult to ensure that BOEM meets its statutory duties. The amendments are necessary to ensure BOEM establishes up-to-date requirements and air quality standards are consistent with those identified by USEPA under the CAA, preparation of projected emissions, air dispersion and photochemical modeling, and control of emission sources. In addition, the purpose of the amendments is to ensure the consistent, efficient, and informed management of the OCSLA provision to ensure air emissions from BOEM-authorized activities on the OCS do not result in material impacts to state air pollution by the GOMR and Alaska OCS oil and gas operations.

As discussed in sections 1.1 and 2.3, BOEM has repeatedly asserted in its own documents, including the Environmental Assessment for this proposed rule, that OCS sources have a minimal effect on onshore air quality. Consequently, there is no urgency in adopting new EETs and modeling requirements for OCS sources to ensure protection of onshore air quality. BOEM can continue to require plans to address NAAQS not identified in its existing rule as it currently does for the 1-hour NO₂ standard. Furthermore, BOEM acknowledges on page 64 that

It is BOEM’s current practice to update the SILs and AAls and add the additional air pollutants for which standards have been established by the USEPA even without changes in BOEM’s regulations.

Because the science studies have not been completed and there is no demonstrated need for immediate updates to the rule, BOEM should eliminate the proposed range of EETs from the

proposed rule. After the studies are completed, BOEM must engage in full APA notice-and-comment rulemaking before changing any EETs.

BOEM solicited comments on the appropriateness of distinct emissions thresholds or threshold formulas for Alaska and Gulf of Mexico, and/or how these thresholds should be structured. Consistent with our overall position on revising EETs, BOEM should delay this decision until the scientific bases for EETs have been established. Until then, we have no basis for making a decision on this important issue. However, given the much lower existing background concentrations in the North Slope Borough, we anticipate that higher EETs will be appropriate in Alaska.

6.2 The high end of the proposed emissions exemption threshold range may be overly conservative.

At § 550.303, the proposed rule identifies the current EETs as the maximum exemption thresholds that might be adopted. However, it is not a foregone conclusion that the EETs recommended in future studies would be lower than the existing EETs. As recently as 2014, Dr. Chester Huang from BOEM published an article in the *Journal of the Air and Waste Management Association* comparing the BOEM EET formula for annual TSP, SO₂, and NO_x with four other options.²⁹ He concluded “it has been shown that the total amount of emissions from the facility for each air pollutant calculated using BOEM’s exemption formula is conservative.”

Based on this paper and industry permitting experience, future conservative EETs might be higher and there is no scientific reason to limit them using the existing formulae. As did Dr. Huang, we typically find that the simple screening procedures such as the one used to establish the existing exemption thresholds are far more conservative than more refined modeling analyses. Such conservatism significantly increases cost to the regulated community with little benefit to onshore air quality. For that reason, we do not support BOEM’s proposal to use the existing formulae, adjusted for compliance at the state seaward boundary, as the upper limit to potential exemption thresholds.

We support BOEM’s proposal to establish new EETs based on the EET studies now underway and we oppose the continued use of the simple Gaussian equation to determine EETs.

6.3 Emissions exemption thresholds must account for distance to the onshore area of a State.

BOEM requested comments on a mass-based emissions exemption threshold similar to EPA’s PSD program (81 Fed. Reg. 19741). A mass exemption threshold is inconsistent with the authority granted by OCSLA because mass emissions alone do not determine whether a source will have a significant effect onshore that affects compliance with the NAAQS. Other factors, primarily distance and wind direction but including atmospheric chemistry and emissions release

²⁹ C.H. Huang (2015), Derivation of exemption formulas for air quality regulatory applications, *Journal of the Air and Waste Management Association*, 65:3, 358-364, DOI: 10.1080/10962247.2014.993003.

characteristics, determine the onshore consequence. If a mass-based exemption level were set, it could result in costly emission control requirements with minimal environmental benefit.

Because OCSLA authorizes BOEM to regulate emissions only to the extent the emissions have a significant effect on onshore air quality and threaten compliance with NAAQS, BOEM cannot ignore distance when establishing exemption thresholds.

6.4 Separate emissions exemption thresholds are needed for criteria pollutants that are also PM_{2.5} and ozone precursors.

6.4.1 BOEM should refine its definition of precursor air pollutant.

BOEM addresses both direct emissions of criteria pollutants and precursor air pollutants. BOEM defines a precursor air pollutant as:

A compound that chemically reacts with other atmospheric gases to form a criteria air pollutant. Some precursor air pollutants are also defined as criteria air pollutants. Precursor air pollutants include VOCs, NO_x, SO_x, and NH₃. (§ 550.302(b))

This definition is too broad. Unless the scientific studies currently underway indicate otherwise, we recommend that BOEM adopt a more specific definition of precursor that outlines the circumstances under which precursors must be considered for modeling and assessment of NAAQS compliance. Provisions similar to that contained in EPA's New Source Review regulations would be appropriate, such as from 40 CFR 51.165(a)(1)(xxxvii):

Regulated NSR pollutant, for purposes of this section, means the following:

(A) Nitrogen oxides or any volatile organic compounds;

(B) Any pollutant for which a national ambient air quality standard has been promulgated;

(C) Any pollutant that is identified under this paragraph (a)(1)(xxxvii)(C) as a constituent or precursor of a general pollutant listed under paragraph (a)(1)(xxxvii)(A) or (B) of this section, provided that such constituent or precursor pollutant may only be regulated under NSR as part of regulation of the general pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(1) Volatile organic compounds and nitrogen oxides are precursors to ozone in all ozone nonattainment areas.

(2) Sulfur dioxide is a precursor to PM_{2.5} in all PM_{2.5} nonattainment areas.

(3) Nitrogen oxides are presumed to be precursors to PM_{2.5} in all PM_{2.5} nonattainment areas, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient PM_{2.5} concentrations.

(4) Volatile organic compounds and ammonia are presumed not to be precursors to PM_{2.5} in any PM_{2.5} nonattainment area, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic

compounds or ammonia from sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations; or

The EPA definition clarifies that VOCs and ammonia are not PM_{2.5} precursors unless it is demonstrated that emissions of these compounds significantly contribute to PM_{2.5} concentrations. The EPA definition of precursor also excludes methane and CO, whereas BOEM proposes to include CO as a precursor pollutant and has solicited comment on how it should address the effects of methane emissions on secondary ozone formation and when it might be appropriate to do so (see Appendix C). BOEM should revise its proposed precursor definition to be consistent with the above citation. BOEM should also revise its proposed photochemical modeling requirements at § 550.304(e)(1) to consider only SO_x and NO_x for modeling PM_{2.5} and only NO_x and VOC when modeling ozone.

6.4.2 BOEM should establish separate EETs for criteria pollutants that are also precursors.

Although BOEM should delay establishing EETs until the science studies are completed, BOEM should then clarify in proposed § 550.303 and § 550.304 that criteria pollutants that are also precursors to PM_{2.5} and ozone formation would have two or more sets of EETs: 1) one triggering an analysis for an associated NAAQS for the criteria pollutant and 2) one or more EETs triggering a photochemical modeling analysis for PM_{2.5} and/or ozone. Some NO_x and SO_x sources may exceed the criteria pollutant EETS, but may not necessarily be required to perform an assessment of compliance with the ozone and/or PM_{2.5} NAAQS.

6.5 The low end of the EET range provides no environmental benefit.

The EETs at the low end of the proposed range likely provide no environmental benefit and could result in significant negative economic impacts. This statement is supported by examining how many plans are likely to require modeling if the lower EETs are adopted and a review of modeling submitted with prior Gulf of Mexico plans.

Emissions associated with 1,132 facilities were obtained from the 2011 Gulfwide Emission Inventory Study (GEIS).^{30,31} We compared actual emissions for each facility to the existing EETs and the proposed minimum EETs. Support vessels emissions were not attributed to the facilities. Only the annual EETs were assessed because the GEIS does not report 24-hour, 8-hour, 3-hour, or 1-hour emission rates. The pollutants considered were NO_x, SO_x, PM_{2.5}, and PM₁₀.

The assessment revealed that 32 facilities would be required to conduct air quality modeling under existing EETs. Under the proposed minimum EETs, and not accounting for facility consolidation, 427 additional facilities would exceed the EETs and have to conduct modeling. In

³⁰ Wilson, D., R. Billings, R. Chang, H. Perez, and J. Sellers. 2014. Year 2011 Gulfwide emissions inventory study. US Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2014-666.

³¹ The GEIS complexes were not assessed because the definition of a complex for the emission inventory differs from that in the proposed rule. We also ignored "minor sources" (caissons, wellhead protectors, and living quarters).

other words, the fraction of facilities exceeding the EETs would increase from 3 percent to 41 percent. Furthermore, this analysis is based on actual emissions rather than projected emissions and did not consider the implications of consolidating facilities or vessel emissions as BOEM now proposes. Inclusion of these additional aspects could further increase the number of facilities required to conduct air quality modeling.

Next we examined modeling studies that have been conducted under the current regulations. We evaluated NO₂ because the NO₂ NAAQS is very stringent. Modeled facilities included jackup rigs, semisubmersible units, and drillships operating between 4 and 196 miles from shore. Of 38 facilities that conducted dispersion modeling of NO₂, approximately 90 percent predicted onshore 1-hr NO₂ concentrations that exceed the 1-hr NO₂ SIL but none predicted exceedances of the 1-hour NO₂ NAAQS.

If the 38-facility dataset is representative of all Gulf of Mexico facilities, then under BOEM's proposed rule 90 percent of OCS facilities may require NO_x ERM and would be required to conduct additional modeling depending on whether the facility is short-term or long-term. However, previous modeling indicates that none of the existing facility operations result in onshore ambient air design concentrations that exceed the NAAQS.

This finding is corroborated by the Gulf of Mexico lease sale Draft EIS BOEM recently circulated for public comment.³² Section 4.1.2 of the Draft EIS states "The 1-hour NO_x modeling performed by operators as part of the post-lease approval process indicates less than the maximum increase allowed."

Review of the proposed EETs and existing dispersion modeling indicate that the proposed rule would increase the number of OCS sources required to conduct modeling without providing any environmental benefit. Consequently, BOEM should not revise its EETs or set a minimum EET threshold until it completes its scientific studies.

6.6 The minimum emissions exemption thresholds in § 550.303 include errors.

There is an error in Table 1 of the proposed rule and in the supporting technical document.³³ The technical document applies a simple Gaussian model to estimate EETs for a given downwind distance, SIL and averaging period. The model is used to predict an hourly concentration and the estimate is supposed to be adjusted for different averaging periods using the persistence factors from EPA's dispersion model AERSCREEN. Our review of the analysis indicates the averaging time scaling was not performed when adjusting the results for each pollutant.

³² Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022 Draft Environmental Impact Statement Volume I & Volume II, U.S. Department of the Interior, Bureau of Ocean Energy Management, April 2016.

³³ "Methodology for Determining Emission Thresholds Based on EPA Significance Levels", Appendix to Air Quality Control, Reporting and Compliance, Proposed Rule (30CFR Part 550: Subparts A, B, C, & J), RIN 1010-AD82, BOEM March 17, 2016.

For example: the EET of 1-hr CO is given by $1354d^{1.2693}$. We have independently checked this result using the equations in the technical document. The leading coefficient for 8-hr CO after adjusting for the decrease in the SIL and the scaling factor for an 8-hour average should be $1354*(500/2000)*(1.0/0.9)$ or 376.1, not 338.5 as reported in the supporting document and Table 1 of § 550.303. Similarly, the annual EETs in Table 1 are 10 times too low. For example, using 1-hour CO as the basis, the constant 1354 should be $1354*(1.0/2000)*(1.0/0.1)$ or 6.77, not 0.677.

7 Emission Reduction Measures

7.1 BOEM must fully define and develop the emission reduction measures program and ensure that it is appropriate for OCS operations.

We support BOEM's proposal to change the circumstances of when ERM, including BACT and emissions credits, are required. However, the proposed rule does not provide adequate information regarding how BOEM would evaluate and implement its ERM program and what expectations would be placed on OCS facility operators. From the preamble, it is clear that the ERM program is still only in a conceptual state, as evidenced by the many solicitations for comment on numerous aspects of ERM (see Appendix C). The ERM program BOEM is considering must be proposed with sufficient specificity to facilitate meaningful stakeholder comment.

In the preamble to the proposed rule, BOEM states that it intends to publish its own ERM guidelines, and solicits comments on the EPA's approach and the underlying methodology for making the determination as to what forms of ERM may be most appropriate under various circumstances. BOEM also solicits comments on why or under what circumstances the EPA approach may or may not be appropriate to the OCS environment and how the ERM requirements could be best tailored to the unique conditions of the offshore oil and gas industry. (81 Fed. Reg. 19744).

As discussed in Section 2.1, given the difference in Congressional mandate, it is entirely appropriate that BOEM's policy regarding emissions controls for OCS facilities differs from EPA's policy. OCS sources are external to the areas whose air quality they may affect and generally are located at long distances from that area. Given the considerable distance between OCS facilities and the shoreline, the potential to "significantly affect the air quality of any state" is minimal and in such cases there is no justification for complicated and expensive emissions controls.

The following sections provide comments and recommendations on specific aspects of the ERM program.

7.1.1 BOEM must clarify the proposed requirements for emission reduction measures.

Proposed §§ 550.309(a)-(c) present requirements for ERM that address "sufficiency", "effectiveness", and "control efficiency." These requirements are unclear, overly complicated, and duplicative of the plan requirements in proposed § 550.205(f). Proposed § 550.205(f) requires operators to provide a description of all ERM, including the "projected quantity of reductions to be achieved" (sufficiency), the "monitoring or monitoring system you propose to use to measure or evaluate the associated emissions" (effectiveness), and the "emission control effectiveness."

Proposed § 550.309(b) requires continuous verification that ERM are effective, however, BOEM does not specify what will be expected of operators in order to demonstrate compliance. BOEM proposes in § 550.309(d) that the Regional Supervisor may require actual emissions data and/or any other information he or she deems necessary to verify compliance. Because this is

overly vague and without well-developed provisions, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment.

Proposed § 550.309(c) requires the operator to substantiate any emissions control efficiency but again BOEM does not specify what will be expected of operators in order to demonstrate compliance with an estimated emission control efficiency.

The requirements related to “effectiveness” and “control efficiency” are suitable for emissions sources installed with BACT or operational controls, but are not relevant terms for emissions credits. BOEM should revise these requirements to only apply to emissions sources installed with BACT or operational controls.

Furthermore, proposed § 550.309(d)(1) requires that operators ensure that emissions associated with emissions sources subject to ERM comply with the emissions verification requirements in § 550.311. However, proposed § 550.311 does not identify specifically how emissions are to be monitored; instead, BOEM states that it is considering various alternatives. BOEM has also proposed inconsistent requirements, where the monitoring requirements in § 550.309(d) are applicable to emissions sources approved subject to ERM, whereas the proposed requirements in § 550.311 are applicable to plans that are approved subject to BACT and emissions credits. Again, without well-defined provisions, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. In Chapter 11, we provide recommendations for monitoring alternatives.

7.1.2 BOEM must provide clarity on how it will consider technical feasibility and cost effectiveness.

In the preamble, BOEM indicates that although not stated explicitly, the “current regulations allow a lessee or operator to apply no controls whatsoever when its “proposed” BACT is claimed to be unfeasible. The proposed rule would make explicit that technically feasible controls would always be required but would allow much greater flexibility in how the relevant ERM are determined and evaluated.” (81 Fed. Reg. 19743).

This position contradicts the authority granted by OCSLA 43 U.S.C. § 1347(b), which requires that (emphasis added),

In exercising their respective responsibilities for the artificial islands, installations, and other devices referred to in section 1333 (a)(1) of this title, the Secretary, and the Secretary of the Department in which the Coast Guard is operating, shall require, on all new drilling and production operations and, wherever practicable, on existing operations, the use of the best available and safest technologies which the Secretary determines to be economically feasible, wherever failure of equipment would have a significant effect on safety, health, or the environment, except where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies.

As required by OCSLA, BOEM's ERM approach must consider the safety of the technology, as well as both economic and technical feasibility, when requiring the use of emission reduction measures.

Typically, offshore facilities have been designed and constructed to maximize space utilization, and extra space is often times not readily available for changes to existing equipment components. Consequently, it is not always technically possible to install and operate emission controls on OCS facilities. For example, many emission controls are dependent on adequate gaseous fuel conditioning, but space and weight constraints limit the available options for add-on gaseous fuel conditioning systems. OCS facilities must stay within overall weight and weight distribution limits to ensure they meet stability and buoyancy requirements required for safety purposes. These overall weight and space constraints limit the use of add-on emissions controls.

If emissions controls are added to a facility, then the weight and positioning of the additional equipment affects the facility's weight bearing capacity for other purposes, which can result in costs to resolve and/or limit certain facility activities that are integral to the function of the facility. Additionally, such added weight may require structural modifications (e.g. additional load bearing structures), which may or may not be possible, based on the design of the facility. When considering technical feasibility, BOEM must take into account the variability in types of facilities. What may be technically feasible for a production platform may not be feasible for a drillship.

In addition, technical feasibility determinations should consider the type of activity of the emissions unit. For example, while catalytic controls may effectively control power generation engines that operate at relatively steady load, the same controls may not be effective at controlling drilling rig engines or crane engines that operate at variable loads for short periods of time, because the engine would not consistently achieve the operating temperature required for catalytic controls to operate effectively. All these considerations must be accounted for when determining technical feasibility.

The costs of installing and operating emissions controls on offshore facilities are much greater than for corresponding onshore facilities, and per OCSLA, must be taken into account. These changes require significant amount of engineering, capital, and time. To retrofit such facilities requires a shipyard period of weeks to months for a mobile structure, or offshore equipment handling vessels and possibly production shut-ins for fixed structures. The costs to make these types of changes can be enormous, ranging from tens of thousands to millions of dollars.

In the preamble, BOEM proposes that "cost effectiveness would be the annual tonnage reduction estimate divided by the cost." (81 Fed. Reg. 19743). However, the basis of absolute tonnage conflicts with OCSLA's provision at OCSLA 43 U.S.C. § 1347(b) that control technologies are not required if the incremental benefits are clearly insufficient to justify the incremental costs. Given "BOEM's distinct mandate to focus on State impacts from OCS activities," the benefits must be based on improvements to onshore air quality, not absolute tonnage. (81 Fed. Reg. at 19730). Further, "BOEM's determination of what constitutes potentially significant emissions varies depending on a proposed facility's distance from shore."

The same basis should be used to determine cost effectiveness, wherein, the cost of controls must be justified by the incremental benefit to onshore air quality.

7.1.3 BOEM should develop a presumptive ERM program, but allow case-by-case ERM analyses.

Completing thorough and complete ERM analyses requires extensive time and effort on the part of offshore operators and reviewing those analyses requires considerable time and effort by BOEM staff. Given the similarities in the types of emission units associated with OCS operations and in the available technically and economically viable controls options, it would benefit the regulated community, and BOEM, if BOEM would establish and maintain an approved presumptive ERM data repository or clearinghouse that would fulfil the requirements of proposed §§ 505.306 and 550.307. Several states have established similar repositories of guidance documents for utilization by the regulated community when performing state BACT analyses. For example, the TCEQ provides extensive guidance on what is considered to be current state BACT for a large variety of industries and emission sources. Similar BOEM guidance would allow OCS operators to apply the presumptive ERM as part of plan submittals without having to provide the detailed and time consuming justification that would be required in an ERM analysis. Application of presumptive ERM as part of plan submittals would also reduce the time necessary for BOEM to review and approve plans.

However, as discussed above, because technical and economic feasibility may vary significantly between OCS facilities, any finalized rule or guidance must allow an option for OCS operators to prepare case-by-case ERM analyses, taking into consideration technical, economic, and safety considerations specific to their facility.

7.1.4 Offshore operators must have the flexibility to install emission reduction measures where it is most effective.

The ERM analysis process proposed in § 505.306(a)(1) requires the designated operator to “Identify all available control technologies relevant to the emissions of the pollutant(s) for which ERM is required.” Because the rule does not limit the ERM review to the largest emissions sources, operators would be required to evaluate control technologies for each emissions source that emits the pollutant for which ERM is required.

As discussed above, installing control technologies offshore is far more complicated and costly than for onshore due to safety considerations, the unique environmental conditions, the operational nature of the facilities (e.g. MODU load management during drilling), and space/weight constraints. Given that OCS facilities are external to the areas whose air quality they may affect, the distance between OCS facilities and the affected areas will impact the effectiveness of the control technology in terms of the incremental benefit to onshore air quality. Where OCSLA requires the use of best and safest control technology, the provisions apply “except where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies” (43 U.S.C. § 1347(b)). Emissions controls, at most, should be required only for the largest emissions units at a facility, where application of the ERM would result in sufficient incremental benefits to onshore air quality to justify the costs.

7.1.5 BOEM must establish a clear process to obtain emission reduction credits.

The proposed regulation allows the use of emissions credits as a component of ERMs. In concept, the flexibility to be able to use emissions credits for ERM purposes would be beneficial to OCS facilities. However, the practical application of emissions credits schemes requires establishing basic principles as part of the relevant implementing regulation. The following principal components appear to be missing from the proposed rule regarding the application of emissions credits:

- The establishment of a baseline period to be used to calculate the quantity of creditable emission reductions attributable to an emission source;
- The useful life of emission reduction credits from an emission source (i.e., does an emissions credit expire if it is not used after a certain time period?); and
- Due to the temporary nature of certain OCS sources when compared to typical onshore stationary sources, the establishment of whether emissions credits can be transferred when an OCS source that relied upon such credits discontinues operation.

Section 550.309(e) proposes requirements for emissions credits but the provisions are vague and unclear, for example, identifying areas where emissions credits may be obtained or what is meant by “net air quality benefit.” The preamble implies that the magnitude of the credit would equal that of the required reduction; however, the use of “net air quality benefit” indicates that the credit would have to achieve the same improvement to air quality (concentration). (81 Fed. Reg. 19733). BOEM must publish a revised proposed rule that establishes clear requirements relating to emissions credits with sufficient specificity to facilitate meaningful stakeholder comment.

Finally, BOEM must work with states and the regulated community to develop an OCS emissions credit banking database that would maintain records of available OCS-generated emissions credits, as well as emissions credits that onshore sources choose to include in BOEM’s banking database. By establishing an OCS emissions credit banking database and associated procedures for banking emissions credits in this database, BOEM would significantly streamline the implementation of an emissions credit program.

7.2 BOEM must clarify that designated operators can propose measures to limit projected emissions below the emissions exemption thresholds.

Under the current regulatory framework, designated operators may propose measures to reduce emissions to stay below EETs. One example of an operator-proposed measure is the use of historical fuel usage rates on emission sources or industry practices (e.g., limit engine operation to 65 or 80 percent maximum load capacity) rather than the more conservative approach of using equipment nameplate capacity to estimate equipment emissions. Another example is the use of projected operating durations rather than the more conservative approach of using calendar-year durations (24 hr/day; 365 day/yr) to estimate equipment emissions. Of course, both these examples have associated tracking and reporting requirements applied during the plan approval process to ensure compliance with the underlying assumptions.

In the preamble, BOEM suggests that under the proposed rule, “a lessee or operator may elect to propose ERM in its plan to ensure that its projected emissions are under the EETs described

in proposed § 550.303.” (81 Fed. Reg. 19757). Further, “BOEM expects lessees or operators are likely to consider operational controls to reduce emissions for many sources, for example limiting the hours of operation, reducing engine power, etc., in order to bring their projected emissions within the EETs.”

However, language in the proposed rule itself is not clear on this issue or on what additional requirements would apply. The proposed rule requires operators to calculate projected emissions based on the highest rated capacity of the emissions source, or the highest rate of emissions, and then compare projected emissions to the EETs to determine if further air quality review is required. The rule does not indicate that application of operator-proposed measures is permitted prior to comparing projected emissions to the EETs.

And, while § 550.309(f) proposes that “you may employ any operational control, equipment replacement(s), BACT, or emissions credit, on either a temporary or permanent basis, to reduce the amount of emissions that would occur in the absence of such measures”, and § 550.205(f) proposes that designated operators provide a description of proposed ERM and demonstrate that the ERM meet the requirements of § 550.309, the proposed § 550.205(o) and 550.303(e) state that plans that have emissions below the EETs are exempt from these sections.

Compliance with these types of proposed measures, such as limited fuel use or load capacity, operational controls and equipment replacement, would be demonstrated through the recordkeeping and reporting requirements in the approved plan. Also, the operator-proposed measures will be included and identified in BOEM’s AQR forms. As discussed in Section 7.1, BOEM’s proposed § 550.309 requires operators to provide detailed information regarding ERM that is generally not appropriate to these types of operational controls (e.g., control efficiency, continuous monitoring, etc.). Therefore, BOEM should not require facilities implementing operational controls and equipment replacement to provide the information proposed in § 550.309.

We support BOEM’s proposed intention to allow for designated operators to propose measures to reduce emissions below EETs, as stated in the preamble. However, the language in the proposed rule must be revised to reflect its intent.

7.3 ERM compliance provisions must account for startup operations.

The proposed requirement to demonstrate continuous compliance does not account for startup operations. Many types of emissions control technologies, such as oxidation catalysts, catalytic diesel particulate filters, and selective catalytic reduction, must be operated above certain temperature thresholds to effectively reduce emissions. For example, for an engine, the time necessary to reach the required operating temperature depends on the engine type, its size, its application, the size of the control device, ambient temperature, and the load imposed on the engine during the startup period. Sound technical reasons and documented regulatory determinations support providing a basis for relief during startup from emission limits based on controls that require engines or other types of emission sources to come up to temperature to effectively control emissions. Consequently, BOEM should account for these alternate operating modes in the ERM provisions.

7.4 BOEM cannot attribute mobile support craft emissions to facilities or impose indirect emissions controls on MSC.

As discussed in Section 1.2.4, proposed §§ 550.205(d)-(e) and 550.224(b) would impermissibly “attribute” all vessel emissions to the emissions of a facility. Because vessels are not “activities authorized” under OCSLA for the purposes of section 5(a)(8), they are beyond the purview of any rule BOEM might promulgate, such as application of ERM. However, BOEM’s ERM requirements, as proposed, will result in the regulation of emissions of platforms and drillships, and potentially MSC, to offset the emissions of “associated” vessels, which are outside the scope of BOEM’s jurisdiction.

OCSLA does not grant authority to regulate or require emissions controls for mobile vessels. As discussed in Section 1.2.4, this is clear from the plain language of OCSLA, which exempts vessels from the purview of OCSLA, as well as the clear intent of Congress included in the legislative history of the 1978 OCSLA amendments. The lack of jurisdiction over vessels has also been recognized by the courts. For example, in 2013, the 9th Circuit Court of Appeals observed that support vessels that are not “[p]ermanently or temporarily attached to the seabed,” or “[p]hysically attached to an OCS facility,” are not “regulated or authorized under the Outer Continental Shelf Lands Act.” *REDOIL v. EPA*, 716 F.3d 1155 (9th Cir. 2013); See 43 U.S.C. §§ 1332, 1333(a)(1).

Beyond the legal issues with these proposed requirements presented in Section 1.2.4, there are practical issues with requiring ERM on vessels that the lessee or operator neither owns nor controls. For example, determination of which party or parties would be responsible for implementing or paying for ERM would be problematic, and would be further complicated in cases where a support vessel services multiple facilities. Furthermore, OCS operators contract for services, but cannot be certain which vessel a contractor will assign – certainly not at the point plans are being developed and submitted. Finally, as discussed earlier, these vessels and associated emissions are regulated under other regulatory programs such as MARPOL and EPA Marine Tier programs.

As described above, the proposed rule would result in the regulation of and implementation of emissions controls on MSC, which is outside the scope of BOEM’s authority.

7.5 Increasing requirements for emission reduction measures could increase the demand for onshore emission reduction credits and the costs of credits could increase well above BOEM’s assumptions.

The average cost BOEM assumed for emissions credits does not reflect recent costs for emission reduction credits in ozone nonattainment areas near the Gulf of Mexico.

Because the EPA lowered the 8-hour ozone NAAQS from 75 ppb to 70 ppb in October 2015 (2015 ozone NAAQS), certain areas along the Gulf of Mexico coast are expected to continue their status as nonattainment areas, and be designated nonattainment with respect to the 2015 ozone NAAQS. This means the demand for onshore NO_x and VOC emission reduction credits in this region will likely continue – even without the additional demand created by BOEM’s proposed regulation. Furthermore, NO_x and VOC emissions reduction mandates associated with attainment plans for these areas, as well as the introduction of new standards for certain

facilities and the increasing stringency of existing standards for other facilities under 40 CFR part 60, could reduce the potential supply of onshore emissions credits available to OCS sources because these type of emissions reductions are not creditable. Moreover, NO_x and VOC emissions reduction mandates associated with attainment plans usually represent low cost emissions reductions available to affected sources, which in turn could increase the cost necessary to generate creditable NO_x and VOC emissions marketable to OCS sources.

Considering the recent costs of emission reduction credits in ozone nonattainment areas in the Gulf of Mexico region, the expected increase in demand for onshore NO_x and VOC emission reduction credits, and the potential decrease in the availability of low cost NO_x and VOC emissions reductions marketable to OCS sources, we believe the emissions credit cost analysis performed by BOEM considerably underestimates the cost of this emission reduction concept. Additional detail and analysis are provided in Appendix B.

7.6 BOEM should not require facilities to notify states to revise their State Implementation Plans.

Proposed § 550.309(e)(6) requires operators to notify states of a need to revise their SIPs when operators acquire emission reduction credits from onshore sources. We are not aware of any SIPs in the Gulf States or Alaska that include reductions in emissions from OCS sources as part of attainment demonstrations. Furthermore, we are not aware of requirements for onshore facilities to notify states when reducing emissions at a facility in order for the state to update its SIP. States and federal agencies will be notified of emissions reductions at onshore facilities through typical permitting processes; therefore, there is no need to provide this additional information to states. This creates a situation which is unnecessarily duplicative and redundant. As discussed in Section 7.1, BOEM must fully develop its emissions credits scheme prior to finalizing the rule, which would include a mechanism for states to access the emissions credits banking database.

Furthermore, the proposed requirement is vague. If BOEM elects not to remove this requirement, BOEM must clarify and specify what information and data the designated operator would be required to submit, and to whom.

8 Modeling Tools and Procedures

Based on the Bureau of Safety and Environmental Enforcement's (BSEE's) web site, there are more than 2100 active platforms in the Gulf of Mexico OCS. Proposed rule changes consolidating facilities, attributing MSC emissions to facilities, and introducing additional EETs are likely to significantly increase the modeling required for plan submittals and, potentially, recertification. As a result, the accuracy and appropriateness of air quality models available to designated operators will be ever more important. As outlined in this chapter, there are a number of issues that need to be addressed. Therefore, any proposed rule should wait until the outcome of BOEM's modeling studies in the Arctic and Gulf of Mexico are completed and peer reviewed.

8.1 BOEM's default dispersion models are not designed to address all the requirements of the proposed rule.

The current offshore modeling approach used by both EPA and BOEM for criteria pollutants involves the application of the OCD model to evaluate emissions from offshore sources within 50 km of the shoreline, and the CALPUFF modeling system for transport distances greater than 50 km. Both models are currently listed in Appendix A: Summaries of Preferred Air Quality Models to 40 CFR Appendix W of Part 51: Guideline on Air Quality Models.

In July 2015, EPA proposed to remove CALPUFF from the list of Preferred Models in Appendix W (80 Fed. Reg. 45340). In addition, EPA does not recommend the aerosol chemistry modules in CALPUFF for secondary aerosol formation. Because at present there is no replacement for CALPUFF, BOEM should allow its continued use even if EPA removes it as a preferred model in Appendix W. CALPUFF can still be used to evaluate direct emissions of criteria pollutants.

OCD is the currently recommended model for offshore distances less than 50 km. However, OCD has not been updated in many years and lacks several features making it difficult to apply for air quality assessments. Specifically, OCD:

- does not contain internal routines for processing either missing data or hours of calm meteorology. The existing postprocessor also cannot perform these tasks without modification.
- does not contain the Plume Volume Molar Ratio Method (PVMRM), Ambient Ratio Method 2 (ARM2) or Ozone Limiting Method (OLM) included as options in AERMOD for assessing the 1-hour NO₂ NAAQS.
- lacks the recommended methods for estimating design concentrations associated with the new 24-hour PM_{2.5}, 1-hour NO₂, and 1-hour SO₂ NAAQS. The current OCD postprocessor cannot perform these tasks without changes to the code.
- does not contain a volume source routine and the area source routine only considers circular areas without allowance for any initial vertical dispersion. Many different types of offshore sources are not easily simulated by the point source routine in OCD, such as support vessels that BOEM has proposed to include in modelling assessments.
- contains a shoreline fumigation model, but requires an overland meteorological data set that is difficult to prepare. The overland meteorological preprocessor is no longer

supported by the EPA and the meteorological data formats required by the preprocessor are no longer supported by the National Climate Data Center.

For recent permitting on the Alaska OCS, the EPA Model Clearinghouse approved a hybrid approach combining a new meteorological pre-processor called AERCOARE and the AERMOD dispersion model. However, this approach is not expected to be included in the upcoming changes to Appendix W and has not been approved for application to offshore facilities in the Gulf of Mexico. In addition, AERMOD without any revisions is not appropriate for offshore sources. Specifically:

- AERMET and AERMOD boundary layer formulation are based on standard overland parameterizations – stable at night, unstable during the day. That is not applicable for overwater dispersion characteristics. The stability depends on the difference between the air and water temperature. Overwater it is possible to have stable conditions 24 hours a day with warm air over cold water or have very unstable conditions 24 hours a day with cold air over warm water.
- The issues with the boundary layer formulation will also impact the mixing height depth calculation.
- A separate issue is the platform downwash issue. Platforms have 10 or 20 meters of open air under them and the building downwash calculations in AERMOD assume the structure is ground-based, which will overstate the downwash. This leads to overpredictions of concentrations near platforms.

Both CALPUFF and OCD are functional and can continue to be applied by skilled modelers, but both require upgrades or replacement if models are to be used to evaluate secondary aerosol formation, MSC, and the statistical nature of the short-term NAAQS for PM_{2.5}, PM₁₀, SO₂, and NO₂. We recommend that BOEM delay implementation of these additional rule modeling requirements until the models are updated.

EPA proposed in July 2015 to allow for the use of numerical weather prediction meteorology where no representative observed meteorology exists, or where it is difficult to measure. As part of its Gulf of Mexico and Arctic studies, BOEM is currently conducting a model performance evaluation to show equivalent performance between the Weather Research Forecast (WRF) - driven AERMOD/CALPUFF and WRF-driven OCD. The proposed rule and new EET development should wait until these studies are complete and new regulatory modeling procedures are recommended.

8.2 Expensive and complex photochemical modeling is not warranted. BOEM has not demonstrated that OCS ozone and PM_{2.5} precursor emissions significantly impact onshore air quality such that attainment or maintenance of the NAAQS are threatened.

As detailed in our comments on the IRIA (see Appendix B), photochemical modeling is an expensive and complex technical undertaking. The proposed rule would require photochemical modeling of ozone and PM_{2.5} in the event precursor EETs are exceeded and an “appropriate” photochemical model is available (§ 550.304(b)).

However, BOEM has not provided any study or evidence to demonstrate that offshore emissions significantly affect PM_{2.5} and ozone concentrations onshore or within the state

seaward boundary. In fact, as discussed in Section 2.3.1, all the SIPs developed by the states bordering the Gulf of Mexico and Alaska, show OCS-based contributions to onshore pollutant concentrations as small. In all cases, the SIPs indicate that the states responsible for achieving NAAQS compliance do not consider OCS sources to be significant contributors. Until such a demonstration is provided, there is no justification for requiring facilities to perform complex photochemical modeling to address PM_{2.5} or ozone compliance with the NAAQS. Any additional requirements are premature until the studies discussed above are complete.

8.3 Proposed method for modeling MSC.

Notwithstanding BOEM's lack of authority to regulate mobile support vessels and our objection to modeling such vessel emissions, the line source method proposed by BOEM is inappropriate. Unlike a busy roadway or a long conveyor belt, which have constant emissions along a line, vessel emissions at a given location are short-lived and not easily assessed as area, line, or even volume sources.

MSC would be more appropriately included as volume sources or thin area sources placed along a transport route as is the case recommended by EPA for roadways or as an area source when the vessels are distributed within a general area of activity. However, the current offshore regulatory model OCD cannot simulate volume or area sources. While OCD could be used to simulate pseudo point sources placed along expected vessel paths, the number of point sources required to accurately characterize such emissions is outside the capabilities of the model. So in addition to the spatial issues involved in distributing the vessel emissions, arbitrary assumptions are needed to temporally distribute such emissions over the distance travelled for each NAAQS averaging period.

Regardless of the modeling technique applied, there are difficulties at the EP, DPP, and DOCD stage specifying which vessel(s) will serve a facility or what its route will be. Near shore, potential impacts are highly dependent on the routes taken by the vessels and the release characteristics and emissions of each vessel. As discussed in Section 3.3, neither the vessel nor the route is likely to be known at the time of plan submittal.

8.4 BOEM's proposed requirement to model mobile support vessels is geographically boundless.

BOEM's proposed rule requires MSC emissions to be considered as long as the MSC is involved in activities supporting the facility, which BOEM asserts should include emissions from the time the vessel leaves port until the time it returns to port. The "port" could be hundreds of miles away in the Gulf of Mexico and would be more than a thousand miles away in Alaska. This is analogous to asking a refinery to evaluate ship emissions from the point where crude oil is loaded until it arrives at the refinery and from the refinery to the port where product is delivered.

Furthermore, it is not clear where impacts must be assessed. The proposed rule suggests vessels supporting Alaska OCS operations in the Beaufort and Chukchi seas would be required to assess emissions and impacts for the entire 1,500-mile voyage to and from Dutch Harbor, their nearest supply port. As discussed in Section 1.2.4 and in Chapter 3, BOEM lacks authority

to regulate vessel emissions and requirements for emissions assessment and modeling are unlawful as well as impractical.

Another critical issue is whether an air quality assessment of vessel emissions would be required to demonstrate compliance at the hull of the ship when a vessel crosses the state seaward boundary. OCSLA does not grant Interior authority to regulate activity outside the OCS, but the proposed rule implies operators would be required to model vessels within the state seaward boundary.

8.5 BOEM's proposal for VOC and NO_x waivers is incomplete.

NO_x and VOC waivers are allowed by EPA under § 182(f) of the CAA for nonattainment areas within an Ozone Transport Region where it can be demonstrated local emissions within an AQCR would not exacerbate existing ozone concentrations. In such instances, local ozone concentrations exceeding the NAAQS are caused by transport within a multistate region upwind. Petitions for waivers to EPA include weight-of-evidence arguments using photochemical modeling, monitoring data, and qualitative descriptions of the effects of local NO_x and/or VOC emissions on ozone formation. Typically, such waivers are obtained for an AQCR to exclude control requirements set forth in a SIP for a much larger area.

BOEM has included this concept for VOC and NO_x waivers in § 550.307. Given that BOEM regulates offshore sources not within an AQCR or a nonattainment area, some adjustments to the onshore waiver programs would be required.

However, prescriptive portions of the proposed rule requiring controls based on NO_x and/or VOC emissions should always be waived if applicants can present an analysis showing such controls would not have significant air quality benefits or would not be required to comply with the NAAQS.

8.6 The procedure for determining background concentrations is critical and must be developed in coordination with the regulated community.

Section 550.304(e) of the proposed rule addresses how background concentrations are to be added to model predictions to determine total concentrations. At § 550.304(e)(2)(i), BOEM states applicants "must use the data provided by BOEM" if BOEM has established "appropriate" background concentrations.

Prior to that process, BOEM needs to propose the procedures it will use to establish background air quality concentrations because there are a number of critical factors. These include: the statistics to be applied to the measurements; data filtering procedures to remove the influences of nearby sources; data stratification parameters to be used, such as stratification by season and hour; and procedures for use and filtering of shoreline data by wind direction to assess onshore versus offshore source influences.

There needs to be flexibility in establishing background concentration because the closest monitoring station is not necessarily the most relevant. Existing ozone monitoring locations along the Gulf coast likely over-state background ozone at the State's seaward boundary because they are influenced by land-based emission sources. For example, in the Houston-

Galveston-Brazoria ozone nonattainment area, the ozone monitor that is closest to the Gulf is located on Galveston Island (EPA site number 48-167-1034). This monitor is located closer to petrochemical facilities in Texas City than to the nearest State seaward boundary. Similarly, in the Beaumont/Port Arthur area, the Sabine Pass ozone monitor (EPA number 48-245-0101) is located closer to petrochemical facilities in Port Arthur than to the nearest State seaward boundary. Such monitors are not representative of the larger Gulf of Mexico area.

There may also be situations where monitoring data are not available or are otherwise unsuitable as background values. In this case, we request that BOEM provide operators the option of using scientifically supported modeling data to estimate background concentrations.

8.7 Regional emission inventories for existing sources and increment consuming sources have not been developed and will be impractical for each operator to develop.

As discussed in Section 2.2, we maintain that OCSLA does not authorize BOEM to require evaluations of AAI because such metrics are not relevant to demonstrating compliance with NAAQS. Nonetheless, in the event that BOEM retains a requirement for increment evaluation, BOEM must provide a regional baseline emissions database to allow modeling of the baseline concentrations and increment consumption. This is a very complex undertaking, and it is unreasonable to require an OCS plan to compile such information.

We also note that onshore sources conducting an increment evaluation under EPA's PSD program are not required to include OCS source emissions. That implies State agencies do not consider OCS sources to significantly consume increments. Consequently, it seems inappropriate to require OCS sources to conduct an onshore increment analysis themselves.

8.8 BOEM's proposed method for comparing model predictions to AAIs is unclear and unnecessarily complicated.

As discussed in Section 2.2, we maintain that OCSLA does not authorize BOEM to require evaluations of AAI because such metrics are not relevant to demonstrating compliance with NAAQS. Nonetheless, in the event that BOEM retains a requirement for increment evaluation, we request that BOEM simplify its AAI compliance assessment.

BOEM's proposed rule uses comparisons to the AAIs based on a 12-month rolling average. Compliance would be indicated when the AAI is not exceeded more than once within any rolling 12-month period. Typically, EPA assesses compliance with the AAIs and NAAQS using calendar block averages, not running or rolling averages. This is a much simpler procedure than what BOEM proposes.

If BOEM maintains its requirement for rolling averages, BOEM needs to clarify exactly how the rolling averages should be calculated. For example, BOEM should confirm for a 24-hour average whether the running average is adjusted by one hour or one minute for each period. Within an 8760 hour year there would be $8760 \div 24 = 365$ 24-hour periods using a running average incremented by an hour.

BOEM also needs to clarify what it means by a 12-month period. Typically, EPA assesses AAls using calendar years over multiple years or in some instances a single 12 month period when meteorological data are collected from an on-site program that does not start on January 1st. BOEM must indicate if the 12-month period is calculated every hour, day, or month within a modeling period greater than a month. The request for a rolling average compliance demonstration adds an extra burden to post-processing the model results that is not included in most modeling systems. Such uncertainty could lead to considerable modeling costs of questionable value that have not been anticipated by the agency.

8.9 BOEM should limit the domain of the modeling assessment.

BOEM specifies in § 550.205(g) and in part in § 550.304(e) that a plan applicant must provide concentration estimates in any area of any state. This requirement implies an unlimited modeling domain and needs to be constrained to the area potentially affected by OCS sources.

We acknowledge the need to identify maximum facility concentrations in attainment and nonattainment areas, and the need to demonstrate compliance with the NAAQS in attainment areas. However, the focus of a modeling assessment should be on the points of maximum impact, not distant locations that are less-affected. We recommend that BOEM limit the domain of the required modeling to coastal areas, which are defined in proposed rule language in Appendix A as follows:

Coastal area of any State means the inland area up to 25 miles of the shoreline where the shoreline refers to the nearest mean high water mark of a State. A lesser distance may be acceptable if the modeling analysis demonstrates that maximum concentrations occur closer to the shoreline.

8.10 BOEM should clarify the process and requirements associated with modeling protocols.

Under § 550.304(a)(2), a modeling protocol and associated data must be submitted to BOEM prior to conducting the analysis. BOEM needs to clarify the content of the protocol and the schedule for review and approval of the protocol. It would improve consistency of content and efficiency of preparation and review if BOEM were to provide a template or framework for the protocol. It would also be helpful if an applicant could submit a protocol that adopts a standardized protocol and identifies only where the modeling analysis would deviate from that standard.

In many instances, the methods and data evolve as the modeling analyses are being conducted, so allowances must be identified for changes. Furthermore, in many instances modeling analyses for similar facilities and modifications to an existing facility would use the same modeling techniques and assumptions as the previous analysis. Therefore, applicants should be allowed to reference a previous protocol to avoid the delay associated with the submittal and review of a protocol for each application.

9 Defining “Significantly Affect”

OCSLA authorizes BOEM to regulate emissions associated with offshore oil and gas exploration, development, and production activities when they “significantly affect” onshore air quality such that attainment or maintenance of the NAAQS is threatened. In response, BOEM developed its current AQRP that first assesses the potential for air quality impacts using a screening procedure. That procedure requires applicants to compare annual emissions from proposed facilities with emissions thresholds that depend on the distance from the OCS facility to the shore. If facility emissions of an air pollutant exceed the relevant criteria, dispersion modeling must be conducted to determine whether the predicted onshore concentrations are “significant.” Under this system, “significant” was used as a proxy for attainment with the NAAQS, and facilities that had a “significant” effect on air quality were subject to emission controls.³⁴

Current and proposed BOEM regulations cite SILs that were developed by the EPA in the 1970s as part of its program to prevent deterioration of air quality in areas attaining the NAAQS. BOEM’s current regulations require application of BACT to the OCS facility when dispersion modeling indicates onshore concentrations exceed the SIL established for a pollutant. The SILs BOEM applies are for annual NAAQS.

The proposed rule also requires dispersion modeling of criteria and precursor pollutants if emissions exceed EETs. Criteria for emission reduction measures are triggered when modeled pollutant concentrations exceed a SIL, either for a short-term or annual NAAQS. BOEM proposes to apply separate impact criteria for short-term and long-term facilities and for effects to attainment versus non-attainment areas when modeled pollutant concentrations exceed the SILs:

- For a short-term facility affecting an attainment area, the applicant must conduct an ERM analysis and implement operational controls that are technically and economically feasible. If no technically feasible operational controls can be implemented cost effectively, then no ERM will be required.
- For a short-term facility affecting a nonattainment area, the ERM process is the same as above. However, if a facility proposes that no technically feasible operational controls are cost effective, BOEM may require the implementation of other ERM, including BACT.
- For a long-term facility affecting an attainment area, the applicant must apply ERM, excluding BACT, for VOC and criteria pollutants. The applicant must also demonstrate compliance with AAls and NAAQS and apply additional ERM if necessary to achieve that compliance.
- For a long-term facility affecting a nonattainment area, the applicant must employ BACT for VOC and criteria pollutants. Applicants must apply additional ERM such that VOC emissions are less than the EETs and model-predicted criteria pollutant concentrations are less than the SILs and total concentrations comply with NAAQS.

³⁴ The modeling requirement does not apply to VOC emissions under the current rule and does not apply to VOC emissions under the proposed rule until BOEM’s Gulf of Mexico science studies are completed.

Although the consequences of affecting an onshore area are identified, BOEM does not define “affect.” We address that omission in this chapter, but first respond to BOEM’s request for comment on how it should treat interim SILs or pollutants/averaging times for which EPA has not established a SIL.

9.1 BOEM should adopt its own SILs.

As discussed in Section 2.1, BOEM has a different mandate than EPA and has no obligation to adopt EPA procedures or EPA impact criteria other than the NAAQS. BOEM adopted EPA SILs for the current air quality regulation, but EPA has not promulgated SILs for all criteria pollutants and averaging times.

We propose that BOEM continue applying only the promulgated EPA regulatory SILs (40 CFR 51.165(b)(2)) until the Gulf of Mexico and Alaska regional air quality studies are completed. If those studies conclude that changes to the AQRP are warranted, the results of the studies may inform selection of appropriate SILs. There does not appear to be a particular standard or formula used by EPA to establish SILs, as they range from 1 to 5 percent of the NAAQS. BOEM has the option of identifying SILs based on a scientific rationale, or some percentage of the NAAQS it deems to be significant. Selection of SILs is another opportunity to involve the regulated community.

If BOEM elects to continue use of EPA SILs, we recommend that BOEM adopt, in lieu of any EPA interim SILs, SILs set at no less than 5 percent of the applicable NAAQS. When EPA promulgates a SIL that is incorporated in the affected state’s SIPs, then the new regulatory SIL would apply.

9.2 In nonattainment areas, BOEM should define “affect” as exceeding a SIL at an onshore location.

BOEM should continue its current policy of requiring emission reductions when model-predicted concentrations in nonattainment areas attributable to an OCS source exceed a SIL. This policy is appropriate because OCSLA requires that OCS sources that have a significant effect on onshore air quality not cause or contribute to violations of a NAAQS.

However, the proposed rule, perhaps inadvertently, requires that a NAAQS analysis be conducted even after application of ERM demonstrates that predicted impacts are below any applicable SILs. Proposed section 550.307(b)(2) requires that, after demonstrating that no SILs are exceeded, “...you must then conduct the analysis described in § 550.307(b)(1)(vi).” Section 550.307(b)(1)(vi) requires ERM until compliance with NAAQS is demonstrated. This is clearly impossible if the area is nonattainment and local monitoring stations continue to show violations of the NAAQS, as reductions in OCS emissions could not fix what is most likely a local onshore emissions problem.

We have proposed in Appendix A that BOEM modify the proposed rule text at § 550.307(b)(2), including deleting the last sentence that references § 550.307(b)(1)(vi).

To further clarify the requirements for assessing air quality impacts in a nonattainment area, we recommend that BOEM define “Affect the air quality of any State” as applied in nonattainment areas as follows:

The air quality of any State coastal nonattainment area is considered to be affected by an OCS source when a model-predicted onshore concentration attributable to emissions from the OCS source exceeds a SIL.

9.3 In attainment areas, BOEM should define “affect” as exceeding a SIL and a corresponding NAAQS.

BOEM's current use of the SILs appears to be borrowed from EPA's PSD permit process. In EPA's program, if predicted concentrations are less than the SILs, the project impact is assumed to be insignificant with respect to increments and NAAQS and no further analysis is warranted. If predicted concentrations exceed the SILs, the applicant must conduct a cumulative analysis to determine compliance with NAAQS.³⁵ Thus, for attainment areas, the SILs are utilized only to determine whether the potential impact warrants a cumulative analysis.³⁶ BOEM has no obligation to apply EPA programs, but this general approach is also appropriate for evaluating whether OCS source emissions significantly “affect” onshore air quality.

Although ERM are appropriate when concentrations attributable to OCS sources exceed SILs in nonattainment areas, the Alaskan coastal areas of the Chukchi and Beaufort seas and the coastal areas of Louisiana, Mississippi, Alabama, and most of Texas are attainment areas for all criteria pollutants.³⁷ Attainment areas can accommodate a greater increase in pollutant concentrations before compliance with ambient air standards are a concern. Consequently, in most attainment areas, the SILs are too stringent a threshold for requiring ERMs.

A SIL associated with the 1-hour NO₂ NAAQS has not been promulgated and BOEM's current policy is to require Gulf of Mexico applicants to add a representative background concentration to the model-predicted NO₂ concentration attributable to facility emissions to evaluate compliance with the NAAQS. Unless the cumulative impact (background plus facility) exceeds the NAAQS, emission controls are not required.

We believe that this is the most appropriate way to determine if an OCS facility has significant onshore air quality impacts that affect compliance with the NAAQS, and thus whether emissions controls are warranted. We therefore recommend that the approach identified above be applied to all criteria pollutants that are emitted from a facility at quantities exceeding an EET. This approach takes into consideration existing air quality conditions onshore, which are critical to

³⁵ Note that EPA's cumulative analysis requires modeling of regional sources and the addition of a background concentration. This double counts contributions from regional emission sources because the effects of those emissions should already be accounted for in the background concentrations.

³⁶ BOEM's current program deviates from EPA's program in this regard in that it requires application of BACT if concentrations exceed SILs. EPA only requires additional analysis.

³⁷ The only nonattainment areas along the coasts of the western and central Gulf of Mexico are the Houston -Galveston-Brazoria ozone nonattainment area and the St. Bernard parish SO₂ nonattainment area. Both nonattainment areas are dominated by onshore industrial emissions.

understanding whether emission control is warranted to comply with onshore NAAQS. This policy is consistent with the intent of Congress that controls only be required where needed to ensure compliance with NAAQS. 43 U.S.C. § 1334(a)(8); 1978 U.S.C.C.A.N., 1674, 1684-1685. Furthermore, unlike SILs, NAAQS are established for all criteria pollutants and averaging periods.

In summary, we recommend that BOEM define “Affect the air quality of any State” as applied in attainment areas as follows:

The air quality of any State coastal attainment area is considered to be affected by an OCS source when emissions from that source result in a model-predicted onshore concentration that exceeds the SIL and the modelled concentration plus background concentration exceeds the NAAQS.

9.4 Emission reduction measures for VOCs should not be required unless BOEM’s ongoing studies conclude there is a significant onshore impact.

For criteria pollutants, BOEM requires modeling of pollutants that exceed EETs. Modeling determines whether the emissions affect the onshore air quality and whether emission reductions are required.

Because BOEM has yet to determine that photochemical modeling tools are available, it eliminates the modeling step for VOCs, a precursor to ozone formation, and requires ERM when emissions exceed the VOC EET. Thus, the proposed rule regulates VOC emissions without any demonstration of impact to onshore air quality. As discussed in Section 1.2.2, this is contrary to BOEM’s authority.

Consequently, BOEM should delete the requirement for VOC ERM based solely on an exceedance of an emissions threshold. At a minimum, VOC ERMs should not be required until scientific studies now underway in the Arctic and the Gulf of Mexico conclude that emissions from offshore facilities are having a significant effect on onshore attainment or maintenance of the ozone NAAQS.

10 Reauthorization of Plans and Plan Revisions

BOEM's proposed regulation would require lessees to resubmit previously approved plans at least every 10 years to verify compliance with BOEM's current air quality regulations. As proposed, all of the applicable requirements in effect on the date of resubmission would apply on the same basis to a resubmitted plan as for an initial plan. See Proposed § 550.284; § 550.303(g); § 550.309(d); § 550.310(c). Proposed § 550.310(c) does not specify the consequence that will follow if BOEM is dissatisfied with the resubmitted plan, but the proposal suggests that failure to resubmit a plan could result in revocation of the lessee's existing plan.

Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone is not grounds for resubmission and additional approval, on new and far more onerous terms, of existing EPs, DPPs, and DOCDs. As discussed in Section 1.3.2, BOEM may not change its regulations to avoid the consequences of what would otherwise be a breach of contract. Section 1.3.2 also notes that OCSLA authorizes BOEM to review an existing plan only "based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan." 43 U.S.C. § 1351(h)(3).

Accordingly, BOEM should not require resubmission and additional approval of existing plans. At a minimum, BOEM should clarify that (1) the resubmitted plan will be reviewed for continued compliance with onshore NAAQS, and (2) additional conditions will be imposed only where an OCS operation is "significantly" affecting the air quality of a state and preventing attainment or contributing to continued nonattainment of onshore NAAQS.

10.1 Current regulations and procedures assure continued compliance with NAAQS.

BOEM's current AQRP has accomplished the Congressional mandate of allowing the development of OCS resources while ensuring continued compliance with the NAAQS. Every proposed EP, DPP, or DOCD is subject to time-tested procedures that consider the magnitude of air emissions against the distance to the shoreline. In some cases, air dispersion modeling is conducted that demonstrates a *de minimis* impact to onshore air quality. In other cases, applicants implement operational controls or install control equipment such that the facility described in the plan is either exempt from modeling or the modeling of controlled emissions meets regulatory criteria.

This initial review must be based on potential emissions from the proposed facility. Potential emissions are calculated assuming equipment is operating at its maximum anticipated rate and applying conservative factors to estimate emissions. In some scenarios, operators may propose measures to reduce emissions to stay below EETs. In actual operation, engines and other equipment operate at rates well below maximum and actual emission factors are lower than the conservative default values that BOEM encourages. Consequently, the emissions and potential onshore impacts found in plans are typically much greater than those that actually occur. In addition, contributions from existing facilities are accounted for in background concentrations when new facilities conduct air quality modeling to demonstrate compliance with the NAAQS.

Furthermore, significant changes in the facility equipment or its operation are already subject to review (e.g., § 550.283(a)(4) requires resubmission of AQRs to account for emission increases, and BSEE inspections offshore typically compare approved AQRs to installed equipment). Absent such changes, there is no compelling reason to re-evaluate the facility on a periodic basis because the initial analysis will still be a conservative assessment of potential air quality effects and existing requirements ensure oversight for changes.

Outside of the plan approval process and BSEE inspections, the air emissions from existing OCS facilities are already subject to periodic review because BOEM conducts a cumulative impact analysis when it proposes additional leasing of offshore areas and approves additional plans.

Finally, the current rule provides BOEM with the ability to review existing facilities in the rare case where a state submits information to the Regional Supervisor that indicates that emissions from an existing facility may be significantly affecting the air quality of the onshore area of the state (§ 550.304 of the current regulation). In that case, the Regional Supervisor will review the available emissions data and make a determination as to whether the existing facility has the potential to significantly affect the air quality of an onshore area. If the existing facility does have the potential to significantly affect the onshore air quality of a state and threaten compliance with NAAQS, then BOEM can require the operator to evaluate facility emissions under that AQRP and apply controls.

For all these reasons, we believe the current program is protective of onshore air quality and that BOEM should not require plan resubmittals.

10.2 Resubmittal, review, and reauthorization of plans will require significant contractor and BOEM staff time.

There are also practical considerations when requiring periodic plan resubmittals. When EPA implemented its Title V Air Operating Permit program in the 1990s, existing major sources were required to submit permit applications by a specified deadline. State and local agencies were overwhelmed by the volume of applications that required their detailed analysis and careful drafting of new permits. It took years for the agencies to address the backlog of applications. Because air operating permits must be renewed every five years, agencies face a recurring barrage of applications near the anniversaries of the initial deadline. This task has become a significant workload for the state air agencies.

Implementation of a requirement for periodic review of existing facility plans would require operators to hire consultants to repeat work that was already reviewed by Interior. Because there are several thousand facilities in the Gulf of Mexico, BOEM would have to significantly increase its staffing to address analyses that offer very little added benefit to onshore air quality.

We also note that the construction permits (i.e., PSD) that EPA issues to industrial sources do not require renewal, and are valid as long as no major modifications occur at the facility.

10.3 Emissions from existing facilities are accounted for in background concentrations.

As discussed in Section 4.1, when emissions from proposed facilities exceed EETs, BOEM's proposed modeling procedure requires applicants to apply approved air quality models to calculate onshore concentrations attributable to the proposed facility. To demonstrate compliance with NAAQS, modeled concentrations are added to existing "background" concentrations to determine cumulative concentrations. This simple procedure accounts for emissions from existing OCS and onshore facilities as part of the background concentration, and provides a cumulative impact analysis. These analyses, which would likely be required for the majority of new facilities (see Section 6.5) and the cumulative analyses BOEM conducts in its lease sale and plan-specific NEPA analyses, ensure that OCS facilities are not causing exceedances of the NAAQS onshore. BOEM's proposal to require re-modeling of existing facilities every ten years is unnecessary.

10.4 Retrofitting existing operational facilities to meet new regulatory requirements is costly and in some cases may not be technically possible.

It is not always technically possible to install and operate emission controls on existing OCS facilities. OCS facilities must stay within overall weight and weight distribution limits to ensure they meet stability and buoyancy requirements required for safety purposes. Typically, offshore facilities have been designed and constructed to maximize space utilization, and extra space is often times not readily available for changes to existing equipment components. These overall weight and space constraints limit the use of add-on emissions controls. If emissions controls are added to a facility, then the weight and positioning of the additional equipment affects the facility's weight bearing capacity for other purposes, which can result in costs to resolve and/or limit certain facility activities that are integral to the function of the facility. Additionally, such added weight may require structural modifications (e.g. additional load bearing structures).

Furthermore, the costs of installing and operating emissions controls on offshore facilities are much greater than for corresponding onshore facilities, and per OCSLA, must be taken into account. To retrofit such facilities requires a shipyard period of weeks to months for a mobile structure, or offshore equipment handling vessels and possibly production shut-ins for fixed structures. The costs to make these types of changes can be very large, in the tens of thousands to millions of dollars.

10.5 BOEM should clarify the requirements for plan revisions.

The proposed rule language in § 550.280 and § 550.303 raises some issues for clarification regarding the requirements for plan revisions.

Section 550.280(a) states:

Compliance. You must conduct all of your lease and unit activities according to your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application, and any approval conditions. You may not install or use any facility, equipment, vessel, vehicle, or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application, and you may not install or use a substitute for any emissions source described in your EP, DPP, DOCD, or RUE, pipeline

ROW, lease term pipeline application, without BOEM prior approval. If you fail to comply with your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application:

While § 550.303(g)(4) states

If you propose to make a change to the equipment on your existing facility or facilities in a year or years where your plan already anticipated operations, and your proposed change would result in an increase in air pollutant emissions from that equipment for any air pollutant, you must submit a revised plan.

The language presented in § 550.280(a) would prevent an operator from replacing a piece of equipment without BOEM approval, even if the replacement would not result in an increase in emissions. This could extend to routine maintenance of a facility where there is no increase in emissions, such as the replacement of a valve. BOEM should revise § 550.280(a) to specify that the condition does not apply to the installation or use of equipment that does not result in an increase in annual air pollutant emissions and does not apply where the proposed activity is determined to be an insignificant activity, as discussed in Section 12.2.

11 Monitoring, Recordkeeping, And Reporting

BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. As explained in sections 1.2.4 and 1.3.1, BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, BOEM should, at a minimum, reduce the monitoring, recordkeeping, and reporting burden to reflect the minimal impact OCS operations have on onshore air quality as follows.

11.1 BOEM should clarify what types or designs of emissions monitoring systems would be acceptable under the proposed rule.

Parametric Emissions Monitoring Systems (PEMS) are referenced in the preamble of the proposed rule (81 Fed. Reg. 19745) as an option for monitoring emissions, but the rule text in § 550.311 does not specifically reference PEMS nor clarify which specific emissions monitoring equipment will be required by the proposed rule. Actual emissions monitoring could include Continuous Emissions Monitoring Systems (CEMS) or PEMS.

Based on discussions in the preamble and the IC Burden Table (81 Fed. Reg. 19790) costs analyzed by BOEM, one might assume that BOEM will likely require PEMS but that is not stated specifically in the proposed rule. Given the harsh and remote environments that OSC sources operate in, CEMS/PEMS would be susceptible to frequent outages and downtime and would be extremely costly to install and maintain. Therefore, we believe that CEMS/PEMS should only be considered when other more reasonable monitoring methods are not appropriate. In most instances monitoring facility fuel usage and hours of operation would provide ample data to accurately estimate emissions.

Additional data would have been provided as part of this comment package; however, because there was not an ANPRM, the regulated community did not have an opportunity to research and analyze possible monitoring options.

11.2 BOEM should limit monitoring to sources subject to BACT requirements.

As currently written, the proposed regulations do not stipulate which specific sources will require emissions monitoring. Specifically, as stated in proposed § 550.311(b)(2) “BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment.”

Also, as discussed above, the specific emissions monitoring systems to be employed to monitor actual emissions has not been specified in the proposal. Actual emissions monitoring could be a CEMS or PEMS. Costs for installation and maintenance of monitoring equipment such as CEMS/PEMS, fuel meters, hourly load capacity monitors, etc. are significant (see Appendix B). As such, the use of PEMS/CEMS and other monitoring equipment on most emissions sources located on MODUs, platforms and MSC would not be cost effective or operationally reliable due to the harsh environment in which this equipment operates. It should also be noted that the CEMS/PEMS are highly sophisticated electronic equipment that require highly skilled and certified technicians to maintain and service. As OCS facilities will operate in remote areas of

the Alaska OCS or Gulf of Mexico, up to hundreds of miles from the nearest shoreline, it could take days to get a service technician to the MODU or platform and the CEMS/PEMS operational, not to mention the cost incurred due to the service call-out.

Therefore, actual emissions monitoring and other parametric monitoring should only be considered for large sources where BACT controls have been implemented to ensure compliance with the NAAQS. Such monitoring measures would only be employed when other more reasonable monitoring measures such as fuel usage or hours of operation are inadequate to ensure compliance.

To ensure accurate, reliable and cost effective monitoring, and to be consistent with the provisions of proposed § 550.205(k), BOEM should allow applicants to submit a monitoring and recordkeeping plan which would include a description of how the applicant proposes to monitor emissions. This would allow the applicant to determine which parameters are best suited to ensure proper control equipment performance. Where the applicant proposes to use EPA or IMO-certified engines, BOEM should not require additional monitoring or source test requirements because the certification process requires the engines to meet performance criteria for the useful life of the engine as long as manufacturer-recommended maintenance is completed.

Furthermore, proposed § 550.311 identifies the conditions under which additional emissions reporting is required. BOEM should revise the proposed rule such that additional reporting will not be required for pollutants for which facility emissions are below the EET or demonstrated onshore impacts well below NAAQS. These facilities clearly are not causing or contributing to an exceedance of the NAAQS in any State, and the additional monitoring and reporting burdens are not warranted.

Proposed § 550.311(b)(1) also requires emissions measurement and reporting of every source that was included in an approved plan in addition to any source that would be classified as part of projected emissions if the plan were resubmitted under the current regulations. In effect, this provision requires a reopening of the approval conditions for existing facilities and conceivably revises the approval conditions without any approval process. BOEM should not require collection of information from existing facilities to demonstrate compliance with requirements established after their plan was approved.

11.3 Emissions testing should only be conducted on the largest emissions units and then only initially and following a physical modification.

Proposed § 550.312(a) requires emission testing every three years if such testing was used to develop emission factors under proposed § 550.205 for a submitted plan. In most onshore permits and source test provisions contained in federal standards, emissions testing is limited to major emissions units and is limited to an initial test and subsequent tests only if the unit is physically modified and emissions from previous test results are no longer representative. Emissions testing is far more complicated offshore than onshore due to safety considerations and space constraints, and should be limited accordingly. Considering the remoteness of the OCS facilities, and the safety considerations and space constraints, if a facility chooses to conduct emissions testing to develop emissions factors, the emissions testing should (at most)

be required only for the largest emissions units at a facility and then only initially with subsequent testing only required if the emission unit is physically modified and previous test results are no longer representative.

11.4 BOEM should exempt certain equipment from monitoring, recordkeeping and reporting.

The level of detail the proposed rule requires is a significant concern. It may be appropriate to include significant sources of emissions (e.g. large stationary engines) that account for the majority of OCS air emissions. However, it is not practical to include small, insignificant sources that do not materially contribute to overall facility emissions, as the environmental benefits do not outweigh the significant resources and costs associated with recordkeeping, reporting and monitoring efforts.

To address this issue, we have prepared a list of “insignificant activities” that we propose would not be included in a plan or any associated emissions inventories. We propose to add a definition of insignificant activities in the form of a table in § 550.105 (see Appendix A). The insignificant activities definition includes a detailed list of activities that do not significantly contribute to emissions at an OCS facility, much less create an adverse impact to air quality onshore. We recommend that BOEM consider inclusion of this definition and the list of insignificant activities to ease the planning, monitoring and reporting burden associated with the proposed rule, as well as ensure that the focus is properly applied to the comparatively larger emissions sources.

11.5 The 10 year recordkeeping requirements of § 550.187(a) and § 550.312(b)(1) as well as the proposed recordkeeping requirements in § 550.205(j) are unjustified.

Proposed § 550.187 requires offshore operators to collect and maintain information regarding all air pollutant emissions from all emissions sources associated with their operations for a period of no less than ten years. Furthermore, proposed § 312(b) requires that offshore operators collect and maintain fuel log and activity data monthly for each emission source for a period of no less than ten years.

There is an information collection (IC) burden for the maintenance of records for ten years, which is greater than typical retention requirements for facilities under EPA or State agency jurisdiction. There is also a “non-hour” cost associated with this requirement. Maintenance of electronic records is not free and given the substantial increase in recordkeeping requirements for each plan, this burden could be substantial. The IC burden associated with recordkeeping activities could be reduced if BOEM followed typical retention policies of other State and Federal agencies, which typically require facilities to retain information for periods ranging between two and five years. As documented in Appendix A, we request that this period be reduced to no more than the shorter of five years or the life of the plan, whichever is shorter.

Although proposed § 550.205(j) requires lessees to “maintain” records of any data or information “establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate their projected emissions,” it does not indicate how long these records must be maintained. (81 Fed. Reg. 19759). BOEM may not impose a potentially

interminable records retention requirement, and must specify a records retention period so the regulated community knows what is required. Accordingly, BOEM must establish a reasonable records retention period before finalizing the regulation. As documented in Appendix A we request that this period be reduced to five years or the life of the plan, whichever is shorter.

11.6 The provisions of § 550.187 should be revised to require emissions reporting only for criteria pollutants.

The preamble discussion indicates that BOEM does not intend to include GHGs or HAPs under the scope of the proposed rule. (81 Fed. Reg. 19751). However, by including GHGs and HAPs in the definition of “air pollutant,” GHGs and HAPs would be subject to the proposed rule, even though they are unrelated to the attainment or maintenance of the onshore NAAQS, and therefore beyond the purview of OCSLA section 5(a)(8). As discussed in Section 1.2.3 of this document, BOEM must revise the emissions reporting requirements of proposed § 550.187 to only apply to criteria pollutants that BOEM is authorized to regulate.

12 Plan Emissions Data Requirements

12.1 Proposed emission source data requirements for plans are overly burdensome, unnecessary, and in many cases impossible to provide.

Section 550.205 identifies the air emissions information that must be submitted with EPs, DPPs, and DOCDs, or application for a RUE, pipeline ROW, or lease term pipeline. This section requests detailed information for the wide range of activities associated with exploration, development and production, including construction and decommissioning, for the duration of the plan. The rule would require such detail as (for example) the serial numbers and revolutions per minute (rpm) of engines of support vessels. In many cases, this level of detail is virtually impossible to provide and is not useful for the purpose of assessing onshore NAAQS compliance.

The proposed rule requires that all emissions sources be included when estimating projected emissions. As written, this could conceivably include sources considered insignificant in other regulatory permitting programs, such as welding and painting maintenance activities, rescue boats, small storage tanks, or fugitive emissions (flanges, valves, etc.) on support vessels or MODU. There is no reasonable rationale for requiring the collection of this level of detail for small sources on the OCS, and the burden of collection of this information in terms of cost and time would far outweigh any nominal benefit of collecting it. See Section 11.4 for additional discussion.

Section 550.205 requires plans to include “the following criteria air pollutant and major precursor air pollutant emissions information:

(a) Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan...

(1) For each emissions source, you must identify, to the extent practicable:

(i) Equipment type and number, manufacturer, make and model, location, purpose (i.e., the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics;

(ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and

(iii) The frequency and duration of the proposed use.

(2) For every engine on each facility, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest maximum rated

capacity for the type of engine which you will use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.

(3) For engines on MSCs, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available, indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.

This is an extraordinary information demand, and requires information that is impossible to predict at the time of application, especially for MSC (see Section 3.2). Furthermore, plans will have to be constantly updated to account for changes in the lessee's equipment and fleet (which occur frequently).

Even ignoring MSC and considering only emission units on drilling units and platforms, the level of detail requested is unnecessary. If BOEM finalizes this proposed requirement, the agency will be overwhelmed with engine data of minimal practical utility. Given the minimal impact of offshore sources to onshore air quality, as discussed in sections 1.1 and 2.3, quantifying emissions to such detail does nothing to enhance assurance that offshore sources are not threatening compliance with NAAQS onshore.

As discussed in Section 1.7, if an operator or lessee were to submit a plan in full compliance with the proposed rule, it would be impossible for BOEM to review the voluminous amount of information required under the proposed rule within the required statutory timeframes. Consequently, BOEM should only promulgate those regulations that are absolutely necessary to address the purported problem of onshore air quality and avoid imposing excessive, expensive, and time-consuming administrative burdens on lessees and the agencies that do nothing to further Congressional goals.

12.2 Plans should focus only on large emissions units.

The level of detail required in the proposed rule for emissions sources described in plans is unmanageable and of great concern. It is appropriate to include large sources of emissions (e.g. large stationary engines) that account for the vast majority of OCS air emissions. However, it is not practicable to include small, *de minimis* sources or activities that do not make significant contributions to overall facility emissions.

As recommended in Section 11.4, BOEM should develop a list of "insignificant activities" that would be exempt from the plan and AQRP requirements of subparts B and C. We propose, in Appendix A § 550.105, a definition and list of insignificant activities. The proposed list includes

equipment and activities that do not significantly contribute to emissions at an OCS facility, much less create an adverse impact onshore. Excluding insignificant activities from rule requirements will ease the planning and reporting burden and maintain the focus on larger emissions sources.

12.3 The proposed hierarchy for estimating emissions is overly prescriptive and unwarranted.

Section 550.205(b) of the proposed rule prescribes a hierarchy of acceptable methods for determining the emission factors for a given emission unit for use in a plan. The proposed hierarchy will require a significant amount of work to evaluate and select a method for each pollutant and each emissions source. This will exponentially increase the amount of time required to prepare emissions inventories, and yet, BOEM has not demonstrated that the current method for determining emissions is ineffective.

Under the proposed rule, if no other methods are applicable, then the lessee or operator must conduct emissions testing on the emissions source to determine the appropriate emissions factor. The other methods include use of: vendor-guaranteed or manufacturer-provided emissions or emission factors; emissions factors generated from source tests required by EPA OCS permits as BOEM emission estimates for a specific rig; a model or table, as appropriate, developed by EPA or Federal Aviation Administration (such as for marine engines, non-road engines, tanks, etc.); emissions factors from a published study conducted by a reputable source (such as California Air Resources Board); MARPOL Annex VI standards; and emissions factors from the Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Emissions Sources.

However, the proposed methodology does not account for the fact that some emission calculations do not lend themselves to a “published” emission factor. The emission factor can be derived for the site specific source. This would include glycol dehydrators, crude oil/condensate storage tanks, and amine gas sweetening units.

Further, regulatory standards to which engines are designed and certified are established for pollutant-specific emissions criteria. Other non-engine emissions source factors are also typically pollutant specific. BOEM should clarify that emission factor evaluations will be conducted on a per pollutant basis, such that an operator may use engine certifications or emissions testing to determine emissions factors for an applicable pollutant and other types of emission factor methods for other pollutants (i.e., AQR default factors).

In reviewing various state and federal agency permitting programs, the process by which an emission factor is selected is at the discretion of the owner/operator of the facility. Onshore facilities are typically not restricted to a hierarchy priority of emission estimation methodologies. In light of all the possible emission estimation methodologies, and to account for advancements in such methodologies, BOEM should leave selection of the methodology to the OCS operators. BOEM will have the opportunity to review and comment on the acceptability of the emissions factors as part of the plan approval process. Also, by including such a detailed list of emission estimation methodologies as part of the rule text, BOEM is limiting their ability to make changes to the list without triggering the rulemaking process.

12.4 The air quality emissions reporting spreadsheets are incomplete.

Section 550.205 of the proposed rule identifies what air emissions information must be submitted with offshore plans, including the acceptable methods for determining the appropriate emissions factors to be used and how to report facility emissions, attributed emissions and projected emissions for offshore plans. In conjunction with the proposed rule, BOEM released draft revised air emissions calculations workbooks that will be used to estimate air emissions for EPs (EP_AQ.xls) and DOCDs (DOCD_AQ.xls) in order to meet the requirements of § 550.205.

The following list outlines discrepancies noted between the proposed rule and the AQR workbooks, and includes recommendations to correct and streamline the IC burden costs for offshore operators. In offering suggested improvements, we are not conceding that we agree with the proposed rule requirements nor that the information addressed is necessary for BOEM to perform its functions or useful in determining whether OCS activities significantly affect the air quality of a state. Furthermore, as discussed in Section 2.7, a minimum of 180 days was needed to conduct a thorough review of the proposed rule and supporting information. The list below reflects as complete a review of the spreadsheets as time allowed.

- The workbooks as released for review and comment use EPA AP-42 references as the primary source of emission factors and only reference industry studies or BOEM's 2005/2011 Gulfwide emissions inventory if no AP-42 factor is available. In contrast, the proposed rule lists emission factor references in a prioritized order, stating that a method may only be used if all other higher priority methods are not available. According to § 550.205(b), AP-42 factors should only be used when factors that are based on source test results or that are vendor-guaranteed or provided by the manufacturer are not available.
- The draft workbooks do not report estimated emissions for each of the emissions categories required under the proposed rule. For example, the SUMMARY page only presents a single maximum 12-month rolling total emissions value for each pollutant, which would represent the "projected emissions" for that pollutant. However, per § 550.205(c)(2), the maximum 12-month rolling sum of emissions needs to be calculated from each facility and from each individual emissions source on or physically connected to each facility. The proposed rule also requires that the lessee report maximum rolling-12 month "attributed emissions" (during the same 12-month period as the facility maximum), which are not calculated by the workbooks.
- Similar to the 12-month sum of emissions discussed above, § 550.205(c)(3), (d), and (e) require the estimation of the maximum projected peak hourly emissions. The draft workbooks calculate hourly emissions for individual sources based on estimated annual emissions. Therefore, those hourly emissions essentially represent average hourly emissions and not maximum projected peak hourly emissions as required by the rule. Furthermore, the draft workbooks overestimate the total hourly emissions for each operating year (each EMISSIONS sheet), because they assume all sources will be operating at the same time rather than accounting for the temporal distribution of source operations. For example, if a support vessel operates from 1/1/16-5/31/16 with 40.8 lb/hr of PM10 emissions and another source operates from 6/1/16-12/31/16 with 40.8 lb/hr of PM10 emissions, the workbooks sum these values together yielding a maximum value of 81.6 lb/hr of PM10 emissions instead of estimating 40.8 lb/hr of PM10. Similarly, a facility may have multiple power generating turbines with one turbine off-line acting as a spare. The AQR spreadsheet would currently estimate emissions as if all turbines were

operating. BOEM should update the workbooks to calculate all of the emissions categories or revise the regulation to clarify that only the emissions categories calculated by the workbooks are necessary. BOEM should also ensure that the AQR workbooks do not overestimate maximum hourly emissions.

- The ability to allocate “attributed emissions” to multiple facilities is not currently functional in the AQR spreadsheet as described under § 550.205(d)(5). It is evident that the inclusion of this functionality was started but not completed.
- The draft workbooks currently do not account for all activities regulated under the proposed new regulations. Specifically, the workbooks do not account for decommissioning activities.
- The draft workbooks currently do not account for including aircraft and onshore facility when predicted concentrations attributable to offshore sources are within 95 percent of a SIL.
- It is unclear how the workbooks could be modified to account for consolidation of multiple facilities, especially in regard to calculating maximum rolling 12-month values of complex total emissions.
- Based on a review of the workbook instructions, BOEM must revise the instructions to more clearly follow the regulatory requirements and include additional instructions for proper use of the workbook. This would minimize the burden on the offshore operators as well as BOEM staff when reviewing completed workbooks. The revisions should be completed prior to publication of the final rule and include an opportunity for additional comment.
- Section 550.205(a) of the proposed regulation requires a substantial amount of information for emission sources that could be captured in the AQR spreadsheets. It would reduce the IC burden on offshore operators if the AQR spreadsheets were revised to include all relevant data requested by § 550.205(a)(1-5) rather than having to provide some of the data in the spreadsheet and the remaining data in separate tables as part of a plan submittal.
- The draft AQR spreadsheets as released for comment have no mechanisms to include ERMs (operational controls, equipment replacement, BACT, or emission credits) that will be employed or acquired as part of a proposed OCS operation. Updating the AQR spreadsheets to standardize and account for ERMs would reduce the IC burden on offshore operators as well as minimize BOEM review time.
- The proposed rule includes a new requirement for ROW, RUE and lease-term pipeline applications to include air emissions data with the application. However, BOEM has not provided a draft air emissions calculations workbook or similar tool for submitting this information.

Notwithstanding the comments above, we request that BOEM update the draft AQR workbooks in order to align with the proposed redline/strikeout rule requirements provided in Appendix A. BOEM must update the workbooks and allow for additional comment prior to publication of the final rule.

12.5 BOEM cannot regulate emissions from aircraft and onshore facilities, which are outside the scope of BOEM's jurisdiction.

As discussed in more detail in Section 1.2, BOEM's proposed rule impermissibly "attributes" non-OCSLA authorized activity (i.e., MSC) emissions to the emissions of a facility, presumably regulating the emissions of platforms and drillships to offset the emissions of "associated" activities. BOEM's regulatory authority under section 5(a)(8) of OCSLA is limited to activities that it "authorizes," which includes "artificial islands and installations...permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources therefrom." 43 U.S.C. § 1333(a). BOEM has no authority to authorize aircraft or onshore facilities, which are clearly not attached to the seabed for the purpose of exploring for, developing or producing oil or gas. BOEM therefore has no authority to regulate their emissions or any other aspect of their operation. Because aircraft and onshore facilities are not "activities authorized" under OCSLA for the purposes of section 5(a)(8), they and their emissions are beyond the purview of any rule BOEM might promulgate.

12.5.1 We support BOEM's determination that collection of emissions data from aircraft and onshore facilities is unnecessary.

BOEM's proposal to not require the collection of emissions data from aircraft and onshore facilities is appropriate, because, as stated in the preamble (81 Fed. Reg. 19737):

collecting information on emissions from aircraft that support OCS operations in all plans would be unduly burdensome since aircraft emissions are a small fraction of emissions in most plans and their inclusion would likely not cause a facility's projected emissions to exceed the EETs or any AAQSB in a State where it would otherwise not do so. Available data from plans submitted to BOEM and its predecessors indicate that the level of relevant emissions from aircraft is generally an extremely small percentage of the total emissions reported in each plan. Furthermore, there are a large number of aircraft supporting OCS facilities and these aircraft service more facilities and are used for a wider variety of purposes than MSC, including for purposes other than supporting oil and gas facilities on the OCS. This makes it cumbersome to accurately quantify and attribute (with respect to OCS support functions) their emissions to individual facilities in a plan in many cases.

Furthermore,

Emissions from large sources onshore are in many cases already identified and regulated by the EPA, or by the States in the context of their respective SIPs. In addition, under the CAA the EPA has established standards for several types of mobile sources, no matter where they are operated through requirements that engines, vehicles, and equipment be certified to exhaust emission limits, and through the regulation of certain characteristics of the fuels used in these engines. (81 Fed. Reg. 19738).

Based on the reasons provided, and because aircraft and onshore facilities are not "activities authorized" under OCSLA for the purposes of Section 5(a)(8), we support BOEM's proposal not to require the collection of emissions data for these sources.

12.5.2 Air dispersion modeling of emissions from aircraft and onshore sources is unwarranted.

Under proposed § 550.205(m), applicants would be required to provide emissions information and model emissions from aircraft and onshore facilities when predicted concentrations attributable to offshore sources are within 95 percent of a SIL. BOEM has not provided a scientific reasoning for the seemingly arbitrary 95 percent threshold nor has it reconciled the valid reasons listed in Section 12.5.1 for not including these sources. Further, BOEM proposes that operators combine modeled concentrations from aircraft and onshore facilities with the impacts of the projected emissions, without consideration that the impacts from aircraft and onshore facilities are negligible and rarely coincide in time or location with impacts from OCS facilities. For this reason, these data are not useful for assessing onshore NAAQS compliance. There is no environmental benefit associated with requiring detailed information about aircraft even if OCS source contributions to onshore concentrations are within BOEM's arbitrary threshold of 95 percent of a SIL.

12.6 It is unreasonable to regulate air emissions from right-of-use and easement and right-of-way activities.

The proposed rule includes a new requirement for ROW, RUE and lease-term pipeline applications to include air emissions data with the application. RUE and ROW applications do not require inclusion of air emissions data under the current regulations,³⁸ and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Nor have RUE and ROW emissions been identified as significant sources in any affected state SIPs. Consequently, it is unreasonable to regulate emissions from these activities.

Furthermore, collecting emissions resulting from installing and operating pipeline that support OCS operations would be unduly burdensome because available data indicate that the level of relevant emissions from pipeline installation and operation is generally an extremely small percentage of the EETs. A review of typical offshore ROW operations indicates that maximum projected emissions from installing a pipeline and operating a junction platform associated with a ROW are on the order of 0-10 percent of the EETs. Similar to BOEM's position on aircraft emissions, because the emissions from activities associated with ROW applications are de minimis, the collection of emissions data from these activities is unwarranted.

12.7 BOEM cannot regulate emissions of black carbon, hazardous air pollutants, hydrogen sulphide, and greenhouse gases.

As discussed in Section 1.2.3, § 550.105 of the proposed rule provides new definitions. The definition of "Air Pollutant" has been expanded beyond criteria pollutants to include precursor pollutants, HAP, and GHG. Inclusion of HAP and GHG increases the number of pollutants BOEM may collect information on from seven to approximately 200.

³⁸ BOEM issued NTL 2015-N06 pertaining to RUE (new installations) which clarified that in order for BOEM to grant the RUE request for installations, the proposed activities by OCS lessees are also subject to the Plans approval process and the regulation requirements set forth in 30 CFR Part 550, subpart B.

The preamble discussion indicates that BOEM does not intend to include GHGs or HAPs under the purview of the proposed rule. (81 Fed. Reg. 19751). However, by including GHGs and HAPs in the definition of “air pollutant,” GHGs and HAPs would be subject to the proposed rule, even though they are unrelated to the attainment or maintenance of the onshore NAAQS, and therefore beyond the purview of OCSLA section 5(a)(8).

Although HAPs and GHGs are not a component of the modelling analyses and are not at this time subject to ERM, the proposed rule imposes a number of requirements to HAPs and GHGs as if they were criteria pollutants:

- Proposed § 550.187 would codify and make mandatory the existing GOMR mechanism for reporting ongoing emissions under the GOADS, as provided for in BOEM NTL No. 2014-G01. NTL No. 2014-G01 currently requires operators to collect and report activity information including facility, equipment, and fuel usage. BOEM uses that information to calculate emissions data for NAAQS criteria pollutants. BOEM also calculates emissions data for GHG to assist operators with their mandatory reporting of greenhouse gases to the EPA. However, proposed § 550.187(a) would expand the requirements to require operators to “collect and maintain information regarding all air pollutant emissions from all emissions sources associated with your operations” which would include collection of GHG and HAP information.
- Under proposed § 550.303, BOEM would establish “the rate of projected emissions, calculated for each air pollutant, above which facilities would be subject to the requirement to perform modelling,” and require lessees and operators to calculate, report, and compare projected emissions of pollutants for the purpose of determining whether modelling is required. Proposed § 550.303(d) would require lessees and operators to account for, consolidate, and model all “air pollutant emissions” from multiple facilities. As the definition of “air pollutant” is currently drafted, these requirements would apply to GHG and HAP emissions even though these emissions are unrelated to the attainment and maintenance of the NAAQS.

BOEM requires applicants to identify SO₂ emissions attributable to H₂S flaring but also requires identification of H₂S emissions if they exceed the Significant Emission Rates (SER) established in EPA’s PSD program. While there is a need to account for SO₂ emissions due to flaring of H₂S, there is no basis under OCSLA to require reporting of H₂S emissions because there is no NAAQS for H₂S.

Because OCSLA does not authorize BOEM to promulgate emission regulations for any purpose other than to the extent that such emissions have a significant impact on onshore air quality, BOEM must remove HAPs and GHGs from the definition of “air pollutant” and from the requirements of the proposed rule.

For similar reasons, BOEM’s consideration of future regulation of black carbon in the preamble is precluded by its lack of OCSLA authority to do so. EPA has not promulgated any air quality standards for black carbon. To the extent black carbon is regulated under the CAA, it is regulated as a component of PM_{2.5}.

13 Other Comments

13.1 BOEM should clarify the terminology for responsible entity.

The proposed rule uses the phrase "lessee, operator and owner" in several places. However, the "designated operator" is the entity responsible for developing, submitting and seeking approval of plans. It is our understanding that it is not BOEM's intent to change the compliance responsibility of the designated operator, who is ultimately responsible for plan submittal and compliance. Consequently, BOEM must clarify the rule text to refer to "designated operator" when referring to the entity responsible for plan submittal and compliance.

13.2 OCSLA does not provide BOEM with authority to incorporate documents and establish them as regulatory requirements.

In proposed § 550.198, BOEM proposes to incorporate by reference certain documents and make them "regulatory requirements." However, BOEM only has the authority to regulate emissions from activities it authorizes to the extent those activities have a significant effect on state air quality and that cause or contribute to a violation of the NAAQS. The documents proposed for incorporation by reference under proposed § 550.198 are not related to this purpose. Instead, they are guidance documents that do not contain mandatory requirements, (e.g. EPA AP-42), or are mandatory standards that are unrelated to BOEM's OCSLA authority (e.g. MARPOL Annex VI, which is applicable to vessel operators, not OCS lessees/operators). BOEM may not make guidance documents mandatory or otherwise hijack regulatory processes that are outside of its jurisdiction to somehow enforce compliance on OCS lessees and operators.

In addition, it is unclear how an operator would comply with non-mandatory guidance documents such as EPA AP-42 or the MOVES Users Guide, which are not worded in mandatory terms and compliance with which is uncertain. It is also unclear how operators are to comply with mandatory regulatory requirements that are not intended for lessees and operators. Therefore, BOEM must remove § 550.198(a)-(d) in its entirety.

APPENDIX A: REQUESTED CHANGES TO PROPOSED RULE

Appendix A - Requested Changes to Proposed Rule

Throughout our comments, we have objected to many of these proposed rule provisions as beyond the scope of BOEM's authority and contrary to law, as well as being impracticable and unworkable. If BOEM nevertheless proceeds with these rule provisions, the agency should, at a minimum, limit certain specified rule provisions according to our suggestions for revised language below.

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
<i>Definitions</i>	550.105	<p><i>Air pollutant</i> means any of the following:</p> <p>(1) Any criteria pollutant for which the U.S. Environmental Protection Agency (USEPA) has established primary or secondary National Ambient Air Quality Standards (NAAQS), in 40 CFR part 50, pursuant to section 109 of the Clean Air Act (CAA);</p> <p>(2) Any precursor air pollutant identified by the USEPA that contributes to the formation of a criteria pollutant through a photochemical or other reaction, including, but not limited to, Volatile Organic Compounds (VOCs), ammonia (NH₃), and those criteria pollutants (CPs) that are also precursors for other CPs (such as sulphur dioxide (SO₂));</p> <p>3) any USEPA-defined Greenhouse Gas (GHG), as defined at 40 CFR 98.6, pursuant to section 111 of the CAA; and</p> <p>(4) Any USEPA-defined Hazardous Air Pollutant, as defined at 40 CFR 63.2, pursuant to section 112 of the CAA</p>	<p>As explained in Section 1.2.3 of our comments, BOEM's mandate under OCSLA is to ensure that OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. NAAQS are based on levels of criteria pollutants and precursor air pollutants. Therefore, it is not appropriate to include hazardous air pollutants and greenhouse gases in the definition of "air pollutant" as these are not covered by the NAAQS. See Section 12.7 of our comments for additional discussions on this issue.</p> <p>Additionally, BOEM states at 81 Fed. Reg. at 19,748 the "definitions related to air quality terms are currently located in three places in § 550: §§ 550.105, 550.200, and 550.302." However, several definitions of air quality terms (air pollutant, attainment area, BACT, emission offsets, existing facility, minerals, non-attainment area, projected emissions) are also contained in §250.105. If BOEM were to proceed with modifying or removing the 30 CFR 550.105 & 550.302 definitions, it would introduce regulatory disconnect between the use of the terms under BDOM's & BSEE's regulation. Such a disconnect creates unnecessary regulatory complexity. It is our request that BSEE revise or delete those definitions from § 250.105 under a separate rulemaking.</p> <p>Finally, consistent with the Environmental Protection Agency's (EPA) regulatory requirements contained in 40 CFR 51.165(a)(1)(xxvii) it is requested that BOEM clarify that VOC and NH₃ are presumed not to be precursors to PM_{2.5}, unless a State demonstrates to the Administrator's satisfaction or EPA demonstrates that emission of VOC or NH₃ from OCS sources are a significant contributor to an area's ambient PM_{2.5} concentrations. As such, we request that the USEPA citation for precursor air pollutant identified by the at 40 CFR 51.166(b)(49)(i) which address this issue be included in the definition of air pollutant.</p>	<p><i>Air pollutant</i> means any of the following:</p> <p>(1) Any criteria pollutant for which the U.S. Environmental Protection Agency (USEPA) has established primary or secondary National Ambient Air Quality Standards (NAAQS), in 40 CFR part 50, pursuant to section 109 of the Clean Air Act (CAA);</p> <p>(2) Any precursor air pollutant identified by the USEPA at 40 CFR 51.166(b)(49)(i) that contributes to the formation of a criteria pollutant through a photochemical or other reaction, including, but not limited to, Volatile Organic Compounds (VOCs), ammonia (NH₃), and those criteria pollutants (CPs) that are also precursors for other CPs (such as sulphur dioxide (SO₂));</p> <p>3) VOCs and NH₃ are presumed not to be precursors to PM_{2.5}, unless a State demonstrates to the EPA Administrator's satisfaction or EPA demonstrates that emissions of VOCs or NH₃ from OCS sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations; any USEPA-defined Greenhouse Gas (GHG), as defined at 40 CFR 98.6, pursuant to section 111 of the CAA; and</p> <p>(4) Any USEPA-defined Hazardous Air Pollutant, as defined at 40 CFR 63.2, pursuant to section 112 of the CAA</p>
	550.105	<p><i>Emissions source</i> means a device or substance that emits air pollutant(s) in connection with any authorized activity described in your plan. Several emissions sources may exist on a single facility, aircraft, vessel, or vehicle. Anything that produces or results in the release of one or more air pollutant(s), including the flashing, flaring or venting of natural gas, involves burning any oil or well test fluids, or generates fugitive emissions, is an emissions source. Examples include, but are not limited to: boilers/heaters/burners, diesel engines, drilling rigs, combustion flares, cold vents, glycol dehydrators, natural gas engines, natural gas turbines, pneumatic pumps, pressure-level controllers, amine units, tanks, dual fuel turbines, sources involved in mud degassing, storage tanks, well testing equipment, vessels (including support vessels, pipeline lay barges, pipeline bury barges, derrick barges), and any other equipment that could cause fugitive emissions, venting, losses from flashing, or loading losses.</p>	<p>The proposed definition of emissions source attempts to list any and all types of equipment and activities that may result in emissions to the atmosphere. This creates a definition that is overly prescriptive and complex. Attempting to list all potential equipment and processes that generate regulated air emissions is not needed to fully define applicable emission sources.</p> <p>It is suggested to simplify the definition as shown to the right. The proposed alternate definition would be inclusive of emission sources listed in the draft definition. However, it is important that text is added (in red) to clarify that an emissions source releases pollutants to the atmosphere and does not include equipment where emissions are recovered and utilized in a beneficial manner as well as limiting the term pollutant to criteria and precursor pollutants. As discussed at length in our comments, BOEM's mandate under OCSLA is to ensure that OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. NAAQS are only based on levels of criteria pollutants and precursor air pollutants.</p> <p>BOEM proposes that all emissions sources be included when estimating projected emissions. This could conceivably include insignificant sources, such as welding and painting maintenance activities, rescue boats, small storage tanks, or fugitive emissions (flanges, valves, etc.) on support vessels or mobile offshore drilling units (MODU). There is no reasonable rationale for requiring the collection of this level of detail for small sources on the OCS, and the burden of collection of this information in terms of cost and time would far outweigh any nominal benefit of collecting it. As such, we are proposing to introduce the concept of creating an "insignificant activities" definition, similar to what most states have included in their air quality rules. Hence, a statement has been added to the definition of emissions source to clarify that insignificant activities are not considered emissions sources.</p> <p>Most state environmental regulatory agencies that have authority from the USEPA to implement and enforce the Part 70 Title V Federal Operating Permit Program and the New Source Review program under the Clean Air Act include "Insignificant Activities" lists in the air permitting rules. A few examples of State agencies that include Insignificant Activities include Louisiana Department of Environmental Quality, Mississippi Department of Environmental Quality, Alabama Department of Environmental Management and the Texas Commission on Environmental Quality. Furthermore, the USEPA under its Clean Air Act Title V Operating permits program</p>	<p><i>Emissions source</i> means a device or substance that emits criteria or precursor air pollutant(s) to the atmosphere in connection with any authorized activity described in your plan. Several emissions sources may exist on a single facility-aircraft, or vessel, or vehicle. Anything that produces air results in the release of one or more air pollutant(s)-including the flashing, flaring or venting of natural gas, involves burning any oil or well test fluids, or generates fugitive emissions-is an emissions source. Examples include, but are not limited to: boilers/heaters/burners, diesel engines, drilling rigs, combustion flares, cold vents, glycol dehydrators, natural gas engines, natural gas turbines, pneumatic pumps, pressure-level controllers, amine units, tanks, dual fuel turbines, sources involved in mud degassing, storage tanks, well testing equipment, vessels (including support vessels, pipeline lay barges, pipeline bury barges, derrick barges), and any other equipment that could cause fugitive emissions, venting, losses from flashing, or loading losses-Equipment and activities listed as "insignificant activities" are not considered emissions sources for purposes of subparts A, B, C.</p>

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language														
			allows the use of "Insignificant Activities" to exempt certain emission sources. Under 40 CFR 70.5(c), the EPA may approve as part of a State program a list of insignificant activities and emissions levels which need not be included in permit applications.															
	550.105	<i>Federal Land Manager (FLM)</i> means the Secretary of the Department with authority over any federal Class I area or sensitive Class II area (or the Secretary's designee).	As discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. Therefore, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed.	<i>Federal Land Manager (FLM)</i> means the Secretary of the Department with authority over any federal Class I area or sensitive Class II area (or the Secretary's designee).														
	550.105	<i>Flaring</i> means the burning of natural gas or other hydrocarbons and the release of the associated emissions into the atmosphere. The term "flaring" is equivalent to combustion flaring (i.e., burning of the gases), but is distinct from cold venting, which involves the discharge of raw pollutants into the air without burning.	The proposed definition contains language that is unnecessary. Furthermore, we request that the current definitions of flaring in § 550.105 be updated to be consistent with the final definition promulgated under § 550.105. If BOEM were to proceed with changing the 30 CFR 550.105 definition of flaring but not change the definition in § 250.105, it would introduce regulatory disconnect between the uses of the term under BSEE's regulation. Such a disconnect creates unnecessary regulatory complexity. Finally, we are proposing to further simplify the definition by replacing the terms "natural gas or other hydrocarbons" with the general term "gas". This change is more inclusive and will eliminate unneeded text.	<i>Flaring</i> means the burning of natural gas or other hydrocarbons and the release of the associated emissions; it is released into the atmosphere. The term "flaring" is equivalent to combustion flaring (i.e., burning of the gases), but is distinct from cold venting, which involves the discharge of raw pollutants into the air without burning.														
	550.105	Proposed new definition.	<p>The level of detail required for emissions sources described in plans is a significant concern in this proposed rule. It is appropriate to include substantial sources of emissions (e.g. large stationary engines) that account for the majority of OCS air emissions. However, as discussed in Section 12.2 of our comments it is not practicable to include small, insignificant sources that do not make significant contributions to overall facility emissions. Due to the lack of environmental benefit compared to the significant effort required to collect information about insignificant sources we request that insignificant activity emission sources not be required for inclusion in plan submittals or associated emission inventories.</p> <p>The proposed definition and list of insignificant activities (see right) include equipment and activities that do not significantly contribute to emissions at an OCS facility, much less create an adverse impact onshore. It is strongly requested that BOEM consider inclusion of this list of insignificant activities to ease the planning and reporting burden associated with the proposed rule, as well as ensure that the proper focus is applied to comparatively larger emissions sources.</p>	<p>Proposed New Definition</p> <p><i>Insignificant Activities</i> means activities with emissions levels which have been determined to be at levels that need not be further assessed for the purposes of this part. Emissions sources identified below as "insignificant activities" are exempt from all air quality requirements in 30 CFR 550:</p> <table border="1"> <thead> <tr> <th>Insignificant Activities List</th> </tr> </thead> <tbody> <tr> <td>1. external combustion equipment with a design rate less than or equal to 10 million btu per hour;</td> </tr> <tr> <td>2. storage tanks, except those storing crude oil and condensate;</td> </tr> <tr> <td>3. any engine with a maximum horsepower rating less than or equal to 100 hp;</td> </tr> <tr> <td>4. emissions from laboratory equipment/vents used exclusively for routine chemical or physical analysis for quality control or environmental monitoring purposes;</td> </tr> <tr> <td>5. noncommercial water washing operations of empty drums less than or equal to 55 gallons;</td> </tr> <tr> <td>6. portable fuel tanks used on a temporary basis in maintenance and construction activities;</td> </tr> <tr> <td>7. emissions from process stream or process vent analyzers;</td> </tr> <tr> <td>8. storage tanks containing soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, molasses, corn syrup, aqueous salt solutions, or aqueous caustic solutions;</td> </tr> <tr> <td>9. catalyst charging operations;</td> </tr> <tr> <td>10. mud degassing operations;</td> </tr> <tr> <td>11. activities which occur strictly for maintenance of buildings, grinding, cutting, welding, woodworking, general repairs, janitorial activities, steam cleaning, and water washing activities;</td> </tr> <tr> <td>12. surface-coating of equipment during miscellaneous maintenance and construction activities, including spray painting, roll-coating and painting with aerosol spray cans.</td> </tr> <tr> <td>13. miscellaneous equipment maintenance or construction, which may include, but is not limited to, such activities as: welding, steam cleaning, equipment used for hydraulic or hydrostatic testing, miscellaneous solvent use, miscellaneous sandblasting, sweeping, insulation removal, acid washing, caustic washing, water blasting, application of refractory and insulation, brazing, soldering, the use of adhesives, grinding, and cutting.</td> </tr> </tbody> </table>	Insignificant Activities List	1. external combustion equipment with a design rate less than or equal to 10 million btu per hour;	2. storage tanks, except those storing crude oil and condensate;	3. any engine with a maximum horsepower rating less than or equal to 100 hp;	4. emissions from laboratory equipment/vents used exclusively for routine chemical or physical analysis for quality control or environmental monitoring purposes;	5. noncommercial water washing operations of empty drums less than or equal to 55 gallons;	6. portable fuel tanks used on a temporary basis in maintenance and construction activities;	7. emissions from process stream or process vent analyzers;	8. storage tanks containing soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, molasses, corn syrup, aqueous salt solutions, or aqueous caustic solutions;	9. catalyst charging operations;	10. mud degassing operations;	11. activities which occur strictly for maintenance of buildings, grinding, cutting, welding, woodworking, general repairs, janitorial activities, steam cleaning, and water washing activities;	12. surface-coating of equipment during miscellaneous maintenance and construction activities, including spray painting, roll-coating and painting with aerosol spray cans.	13. miscellaneous equipment maintenance or construction, which may include, but is not limited to, such activities as: welding, steam cleaning, equipment used for hydraulic or hydrostatic testing, miscellaneous solvent use, miscellaneous sandblasting, sweeping, insulation removal, acid washing, caustic washing, water blasting, application of refractory and insulation, brazing, soldering, the use of adhesives, grinding, and cutting.
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				<p>14. refueling emissions from forklifts, cranes, carts, maintenance trucks, helicopters, marine vessels, and other similar sources;</p> <p>15. office activities such as photocopying, blueprint copying, and photographic processes;</p> <p>16. emissions from pipeline pigging and repair operations;</p> <p>17. fugitive dust emissions from mud, cement, or dry chemical transfers, storage and use;</p> <p>18. emissions from storage or use of water-treating chemicals;</p> <p>19. miscellaneous additions or upgrades of instrumentation or control systems;</p> <p>20. emissions from food preparation in kitchens, cafeterias, and facilities where food is consumed on-site;</p> <p>21. emissions from air contaminant detectors, air contaminant recorders, combustion controllers, or combustion shutoff devices;</p> <p>22. buildings, cabinets, and facilities used for storage of chemicals in closed containers;</p> <p>23. use of products for the purpose of maintaining air conditioning or refrigeration units;</p> <p>24. stacks or vents to prevent escape of sanitary sewer gases through plumbing traps and marine sanitation devices;</p> <p>25. emissions from equipment lubricating systems (i.e., oil mist);</p> <p>26. potable water treatment systems and sewage treatment systems;</p> <p>27. instrument air systems, excluding fuel-fired compressors;</p> <p>28. air vents from air compressors;</p> <p>29. periodic use of air for cleanup;</p> <p>30. solid waste dumpsters;</p> <p>31. emissions from pneumatic starters on reciprocating engines, turbines, or other equipment, pneumatic pumps, and pneumatic pressure level controllers;</p> <p>32. emissions from engine crankcase vents;</p> <p>33. generators, boilers, or other fuel burning equipment that is of equal or smaller capacity than the primary operating unit, that cannot be used in conjunction with the primary operating unit (except for short durations when shutting down the primary operating unit (maximum of 24 hours) and when starting up the primary operating unit until it reaches steady-state operation (maximum of 72 hours)), and that does not increase emissions of any criteria or precursor air pollutant;</p> <p>34. lifeboats and fast rescue boats;</p> <p>35. emissions from firefighting training or testing;</p> <p>36. produced water treatment units (e.g., Wemco units) on crude oil and natural gas production platforms;</p> <p>37. emergency electrical power generators used only during power outages or periodic testing;</p> <p>38. emissions associated with an oil spill or emergency response action, exercise or drill;</p> <p>39. emissions associated with laundry operations, including but not limited to the operation of washers, extractors, dryers;</p>

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				<table border="1"> <tr> <td>40. Emissions associated normal use of consumer-type cleaning or disinfecting products or medical products such as furniture polish, spray disinfectants, cleansers, hand sanitizers, asthma inhalers, etc.;</td> </tr> <tr> <td>41. refuse incinerators;</td> </tr> <tr> <td>42. temporary sources that operate less than 60 days;</td> </tr> <tr> <td>43. other similar sources that the Regional Supervisor determines are insignificant activities;</td> </tr> <tr> <td>44. Emission units that emit no more than 5 tpy of any criteria or precursor air pollutant.</td> </tr> </table>	40. Emissions associated normal use of consumer-type cleaning or disinfecting products or medical products such as furniture polish, spray disinfectants, cleansers, hand sanitizers, asthma inhalers, etc.;	41. refuse incinerators;	42. temporary sources that operate less than 60 days;	43. other similar sources that the Regional Supervisor determines are insignificant activities;	44. Emission units that emit no more than 5 tpy of any criteria or precursor air pollutant.
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	550.105	<i>Minerals</i> includes oil, gas, sulphur, geopressured-geothermal and associated resources, and all other minerals that are authorized by an Act of Congress to be produced from public lands.	No comments regarding this definition.	N/A					
	550.105	<i>Mobile support craft (MSC)</i> means any offshore supply vessel (OSV) as defined by the USCG in accordance with 46 U.S.C. 2101, and any ship, tanker, tug or tow boat, pipeline barge, anchor handling vessel, facility installation vessel, refueling or ice management vessel, oil-spill response vessel, or any other offshore vessel, remotely operated vehicle (ROV), or any offshore vehicle used by, or in the support of, the offshore operations described in a plan. For the purpose of evaluating air emissions, an MSC is considered a facility while temporarily attached to the seabed or connected to another facility.	More clarity is needed in determining what is meant by "connected to another facility." It is requested that the phrase "by a walkway" be added. This addition will eliminate confusion and inconsistent application when the rule is applied. For example, a supply vessel may be temporarily servicing a facility by supplying potable water or diesel fuel via a transfer hose. This type of operations should not be considered as "connected to another facility." This clarification would not change how air emissions are accounted for under § 550.205(d).	<i>Mobile support craft (MSC)</i> means any offshore supply vessel (OSV) as defined by the USCG in accordance with 46 U.S.C. 2101, and any ship, tanker, tug or tow boat, pipeline barge, anchor handling vessel, facility installation vessel, refueling or ice management vessel, oil-spill response vessel, or any other offshore vessel, remotely operated vehicle (ROV), or any offshore vehicle used by, or in the support of, the offshore operations described in a plan. For the purpose of evaluating air emissions, an MSC is considered a facility or part of facility as specified in the definition of facility in § 550.302(b) in a facility while temporarily attached to the seabed or connected to another facility.					
	550.105	<i>Offshore vehicle</i> means a type of MSC that is capable of being driven on ice and which provides support services or personnel to your facility or facilities.	No comments regarding this definition.	N/A					
	550.105	<i>Right-of-use and easement (RUE)</i> means seabed use authorization, other than an OCS lease, that BOEM may grant at an OCS site pursuant to §§ 550.160 through 550.166 of this part.	To maintain consistency with BSEE definitions found in § 250.105 it is requested to align the definitions of "right of use" and "easement" as two separate terms.	<i>Right-of-use and easement (RUE)</i> means seabed use authorization, other than an OCS lease, that BOEM may grant at an OCS site pursuant to §§ 550.160 through 550.166 of this part. <i>Right-of-use</i> means any authorization issued under 30 CFR Part 550 to use OCS lands. <i>Easement</i> means an authorization for a nonpossessory, nonexclusive interest in a portion of the OCS, whether leased or unleased, which specifies the rights of the holder to use the area embraced in the easement in a manner consistent with the terms and conditions of the granting authority.					
	550.105	<i>State</i> means any State of the United States (U.S.) extending to the limit of the State seaward boundary (SSB), as defined in 43 U.S.C. 1301(b).	No comments regarding this definition.	N/A					
	550.105	<i>Venting</i> means the release of gas into the atmosphere, including through a stack without igniting it, whereby relief flows of natural gas or other hydrocarbons are directed to an unignited flare or which are otherwise discharged directly to the atmosphere. This includes gas that is released underwater and bubbles to the atmosphere.	To maintain consistency with BSEE definitions found in § 250.105 it is requested to adopt the BSEE definition of venting. Note this definition is consistent with the current definition contained in in § 550.105.	<i>Venting</i> means the release of gas into the atmosphere, including through a stack into the atmosphere without igniting it, whereby relief flows of natural gas or other hydrocarbons are directed to an unignited flare or which are otherwise discharged directly to the atmosphere. This includes gas that is released underwater and bubbles to the atmosphere.					
<i>May I use or be required to use alternate procedures or equipment?</i>	550.141(d)	In order to protect public health, you may be required or allowed by the Regional Supervisor to temporarily suspend the use of equipment that emits air pollutants, or to implement operational control(s) on the use of such equipment, when an adjacent State or locality declares an air quality episode or emergency, provided that any such suspension or operational control(s) would not cause an immediate threat to safety or the environment.	In § 550.141(d), the Proposed Rule provides BOEM authority to temporarily suspend the use of equipment that emits air pollutants, or to implement operational control(s) on the use of such equipment, for the purpose of "protecting public health" when an adjacent State or locality declares an "air quality episode or emergency." This provision is inconsistent with the scope of BOEM's authority under Section 5(a)(8) of OCSLA, which only allows BOEM to regulate for "compliance with the [NAAQS]." Accordingly, even if there is an onshore emergency, that emergency must be related to compliance with the NAAQS, and BOEM must demonstrate that the OCS facility at issue is (1) significantly impacting the ambient air quality of that state, and (2) causing or contributing to the NAAQS violation that gives rise to the state-declared "emergency," before it may impose any operational control or limitation on the use of equipment. The probability that such a situation could occur is extremely remote. As BOEM itself acknowledges in the preamble to the rule and in its many environmental analyses, it is unlikely that an adjacent state will experience any significant, much less NAAQS-violative, impact from an OCS facility. Given this, it is extremely unlikely that reducing an OCS facility's emissions would provide any benefit in mitigating the state emergency or relate to onshore compliance with the NAAQS. Accordingly, proposed § 550.141(d) should be removed from the proposal.	In order to protect public health you may be required or allowed by the Regional Supervisor to temporarily suspend the use of equipment that emits criteria or precursor air pollutants, or to implement operational control(s) on the use of such equipment, when an adjacent State or locality declares an air quality episode or emergency, provided that any such suspension or operational control(s) would not cause an immediate threat to safety or the environment, and it can be determined that your OCS source is contributing to the State or local air quality episode or emergency.					

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	550.141(c)	<p>With respect to published documents cited in these regulations, including those incorporated by reference in § 550.198, the following provisions apply:</p> <p>(1) In each instance, the applicable document is the one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. You may comply with a later edition of a specific document incorporated by reference, provided you show that complying with the later edition provides a degree of scientific or technical accuracy, environmental protection, or performance equal to or better than would be achieved by compliance with the listed edition, and you obtain the prior written approval for alternative compliance from the authorized BOEM official.</p> <p>(2) In the case of USEPA documents, you may always use the most recent version approved by the USEPA.</p>	<p>As technical knowledge and scientific evaluation evolves, it is imperative that BOEM's rules incorporate the most recent, state-of-the-art science. As noted in our below comments to § 550.198, there is no need for the documents to be incorporated by reference. If BOEM elects to proceed with the listing of published documents, it is imperative that the language be changed to allow the use of the most recent, state-of-the-art science. Therefore, it is requested that bullet item 1) in this paragraph be changed to say that the most recent version of any supplemental technical document may be used as a standard and the Regional Supervisor may request any sufficiency determinations from the publishing body rather than from the individual operators.</p> <p>If the language is not altered, BOEM may be forced into largely unworkable situations whereby BOEM will be inundated with "alternative compliance" requests from a number of operators each time the incorporated by reference documents undergo the typical processes by which they are updated. Such an administrative burden is not anticipated under the IC burden hours included in the preamble.</p>	<p>With respect to published documents cited in these regulations Subpart B, including those incorporated by reference in § 550.198, the following provisions apply:</p> <p>(1) In each instance, the applicable document is the most recent version approved by the publishing body, one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. You may comply with a later edition of a specific document incorporated by reference, provided you show that complying with the later edition provides a degree of scientific or technical accuracy, environmental protection, or performance equal to or better than would be achieved by compliance with the listed edition, and you obtain the prior written approval for alternative compliance from the authorized BOEM official.</p> <p>(2) In the case of USEPA documents, you may always use the most recent version approved by the USEPA.</p>
<i>When will BOEM grant me a right-of-use and easement, and what requirements must I meet?</i>	550.160(f)	<p>If you apply for a RUE with a facility as defined in § 550.302 or you hold a RUE with such a facility, then you must submit the information required by § 550.205, except that the ten-year periodic review requirement in § 550.310(c) may be waived by the Regional Supervisor. For the purposes of this section, any provisions of those sections applicable to a lessee or operator should be read to refer equally to any RUE applicant or any holder thereof. If the RUE is approved or held as part of an existing or proposed plan, no additional air quality requirements would apply to the plan.</p>	<p>As discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that this provision be deleted.</p>	<p>If you apply for a RUE with a facility as defined in § 550.302 or you hold a RUE with such a facility, then you must submit the information required by § 550.205, except that the ten-year periodic review requirement in § 550.310(c) may be waived by the Regional Supervisor. For the purposes of this section, any provisions of those sections applicable to a lessee or operator should be read to refer equally to any RUE applicant or any holder thereof. If the RUE is approved or held as part of an existing or proposed plan, no additional air quality requirements would apply to the plan.</p>
<i>What region-wide offshore air emissions data must I provide?</i>	550.187(a)	<p><i>OCS emissions inventory.</i> You, as a lessee, an operator, or a holder of a RUE or pipeline ROW (whether or not that ROW includes an accessory structure), must collect and maintain information regarding all air pollutant emissions from all emissions sources associated with your operations. You must retain this information for a period of no less than 10 years. You must submit this information to the appropriate regional office on an ongoing basis according to a schedule corresponding to the schedule for the National Emissions Inventory as established by the USEPA. If you have an emissions source that generates facility emissions that have a potential to emit (PTE) such that it would qualify as a Type A source according to USEPA's regulations in table 1 of appendix A of subpart A ("Emission Thresholds by Pollutant for Treatment as Point Source") of 40 CFR 51.50, then, beginning in either 2017 or the next reporting period after [EFFECTIVE DATE OF THE FINAL RULE], you must report this information according to the timeframes specified in 40 CFR 51.30(b).</p>	<p>Throughout the proposed terms "lessee" and "operator" appear to be used interchangeably. It is requested that where these terms appear that the term "designated operator" be used to ensure that it is clear that the designated operator of any OCS facility is the responsible party. This approach is consistent with implementation of other OCS requirements.</p> <p>As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants required for the inventory are criteria and precursor air pollutants.</p> <p>81 Fed. Reg. at 19751 acknowledges that USEPA also estimates mobile source emissions of commercial marine vessels, which makes the inclusion of marine support craft into the OCS emission inventory unnecessary. Furthermore as discussed in Section 1.2.4 of our comments BOEM does not have the authority to regulate MSCs. As such, we request that MSCs be excluded from emission inventory requirements as well as all provisions of this regulation.</p> <p>As discussed in Section 11.5 of our comments, a record retention period of 5 years or the life of the plan, whichever is shorter, aligns with similar USEPA and State air quality programs. We are not aware of any other air quality programs that require a 10-year record retention schedule.</p> <p>BOEM is the lead agency for air quality in the Western and Central Gulf of Mexico, and the Arctic OCS regions. Therefore, we request the deletion of any references to USEPA requirements for the National Emissions Inventory. It is incumbent on BOEM to coordinate with USEPA to ensure that emission inventories for OCS facilities are coordinated with USEPA's schedule for the National Emissions Inventory. BOEM may elect to continue its current process by which it communicates upcoming agency collection activities via the NTL mechanism (e.g., BOEM 2014-G01).</p> <p>Finally, as explained in Section 2.8 of our comments the changes proposed in this rulemaking are significant and will require time for operators and BOEM staff to understand and implement. Therefore, it is critical that a phase-in period be incorporated into the implementation of the final rule. It is requested that additional time be provided to allow the regulated community and BOEM staff to develop compliance programs to meet the requirements of the final rule. This additional time is justified since the new requirements were not published as an Advanced Notice of Proposed Rulemaking which would have allowed more time for public comment, and allowed for more time for the development of compliance programs.</p>	<p><i>OCS emissions inventory.</i> You, as a lessee, an designated operator, or a holder of a RUE or pipeline ROW, whether or not that ROW includes an accessory structure, must collect and maintain information regarding all criteria and precursor air pollutant emissions from all emissions sources as identified in your plan associated with your operations, excluding MSCs. You must retain this information for a period of no less than five years or the life of the plan, whichever is shorter years. You must submit this information to the appropriate regional office on an ongoing basis according to a schedule established by BOEM, corresponding to the schedule for the National Emissions Inventory as established by the USEPA. If you have an emissions source that generates facility emissions that have a potential to emit (PTE) such that it would qualify as a Type A source according to USEPA's regulations in table 1 of appendix A of subpart A ("Emission Thresholds by Pollutant for Treatment as Point Source") of 40 CFR 51.50, then, beginning in either 2017 or the next reporting period after [EFFECTIVE DATE OF THE FINAL RULE], you must report this information according to the timeframes specified in 40 CFR 51.30(b).</p>
	550.187(b)	<p>The information provided must include the emissions of or the activity data necessary to calculate the emissions of stationary</p>	<p>The terms "stationary source" and "non-stationary source" as used in this subsection are not defined in the proposed rule and do not align with the remainder of the proposed</p>	<p>The information provided must include the emissions of or the activity data necessary to calculate the emissions of stationary emissions sources described in your plan, excluding MSCs.</p>

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		emissions sources, including all facilities, and all non-stationary sources, including MSC(s) and any other non-stationary emissions source(s) of air pollutants above the OCS or above State submerged lands that operate in support of your facility or facilities, as determined by the Regional Supervisor. You may request that the owner of such non-stationary emissions source(s) provide the information to BOEM or a BOEM-designated agent, but if the owner does not provide the information, the lessee, operator, or RUE or pipeline ROW holder is still responsible for submitting the required information.	regulatory language, which primarily uses the term emission source. Deleting the use of terms "stationary source" and "non-stationary source" will provide further clarity and eliminate unnecessary regulatory text. As discussed in Section 1.2.4 of our comments, BOEM lacks the authority to regulate MSCs. As such, we proposed the removal of the requirement for the operator to provide information on emissions on the MSCs.	including all facilities, and all non-stationary sources, including MSC(s) and any other non-stationary emissions source(s) of air pollutants above the OCS or above State submerged lands that operate in support of your facility or facilities, as determined by the Regional Supervisor. You may request that the owner of such non-stationary emissions source(s) provide the information to BOEM or a BOEM-designated agent, but if the owner does not provide the information, the lessee, operator, or RUE or pipeline ROW holder is still responsible for submitting the required information.
	550.187(c)	As part of the information required in this section, you must submit, in a form and manner as specified by the Regional Supervisor: (1) Your facility and equipment usage, including hours of operation at each percent of capacity for each emissions source; and/or (2) Your monthly and annual fuel consumption showing the quantity, type, and sulphur content of fuel used for each emissions source that generates air pollutants in connection with operations on the OCS. (3) The information provided should be at a sufficient level of detail so as to facilitate BOEM's compilation of a comprehensive OCS emissions inventory of air pollutants. (4) You must classify the emissions according to the appropriate Source Classification Codes (SCCs) as defined by the USEPA in FIRE Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, incorporated by reference in § 550.198(b)(1)(iv).	To be consistent with the proposed approach that each operator will be required to specify the specific monitoring requirements as part of their plan submittal, we are requesting that the detailed items identified in § 550.187(c)(1-4) be deleted as they may conflict with the approved plan. As discussed in Section 11.2 of our comments, BOEM will have the opportunity to review and approve all proposed emission source monitoring requirements prior to plan approval. See additional comments below under § 550.311.	As part of the information required in this section, you must submit, in a form and manner as specified by the Regional Supervisor: (1) Your facility and equipment usage as described in your approved plan, including hours of operation at each percent of capacity for each emissions source; and/or (2) Your monthly and annual fuel consumption showing the quantity, type, and sulphur content of fuel used for each emissions source that generates air pollutants in connection with operations on the OCS. (3) The information provided should be at a sufficient level of detail so as to facilitate BOEM's compilation of a comprehensive OCS emissions inventory of air pollutants. (4) You must classify the emissions according to the appropriate Source Classification Codes (SCCs) as defined by the USEPA in FIRE Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, incorporated by reference in § 550.198(b)(1)(iv).
	550.187(d)	(d) The Regional Director may waive or permit delay in compliance with the requirements of this section on a region-wide basis.	No comment regarding this requirement.	N/A
Documents incorporated by reference.	550.198(a)	(1) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. In each instance, the applicable document is the one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. To enforce any edition other than that specified in this section, BOEM will publish a document in the Federal Register and the material will be available to the public. All approved material is available for inspection at the Bureau of Ocean Energy Management, Office of Policy, Regulation and Analysis, 45600 Woodland Road, Sterling, Virginia 20166 or by phone at (703)977-1610, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or refer to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html . (2) The effect of incorporation by reference of a document into the regulations in this part is that the incorporated document is a regulatory requirement. When a section in this part incorporates all of a document, you are responsible for complying with the provisions of that entire document, except to the extent that the section which incorporates the document by reference provides otherwise. When a section in this part incorporates part of a document, you are responsible for complying with that part of the document as provided in that section. BOEM incorporated each document or specific portion by reference in the sections noted. The entire document is incorporated by reference, unless the text of the corresponding sections in this part calls for compliance with specific portions of the listed documents. In each instance, the applicable document is the specific edition or specific edition and supplement or addendum cited in this section.	The documents proposed for incorporation by reference under this paragraph are either reference documents that do not contain compliance requirements (e.g. USEPA AP-42), or the documents are standards that are required by other regulatory requirements (e.g. MARPOL Annex VI). It is not necessary to incorporate these documents by reference as compliance requirements. These documents are either existing compliance requirements, or are not "compliance documents" at all, such as the USEPA AP-42 or the MOVES Users Guide. These documents were developed as guidance documents not regulatory requirements and should remain so. Therefore, it is requested that BOEM remove § 550.198(a)-(d) in their entirety.	(1) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. In each instance, the applicable document is the one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. To enforce any edition other than that specified in this section, BOEM will publish a document in the Federal Register and the material will be available to the public. All approved material is available for inspection at the Bureau of Ocean Energy Management, Office of Policy, Regulation and Analysis, 45600 Woodland Road, Sterling, Virginia 20166 or by phone at (703)977-1610, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or refer to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html . (2) The effect of incorporation by reference of a document into the regulations in this part is that the incorporated document is a regulatory requirement. When a section in this part incorporates all of a document, you are responsible for complying with the provisions of that entire document, except to the extent that the section which incorporates the document by reference provides otherwise. When a section in this part incorporates part of a document, you are responsible for complying with that part of the document as provided in that section. BOEM incorporated each document or specific portion by reference in the sections noted. The entire document is incorporated by reference, unless the text of the corresponding sections in this part calls for compliance with specific portions of the listed documents. In each instance, the applicable document is the specific edition or specific edition and supplement or addendum cited in this section.

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	550.198(b)	Environmental Protection Agency, Office of Air and Radiation, 1200 Pennsylvania Ave, NW, MS6101A, Washington, DC 20460. (1) AP 42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, January 1995, incorporated by reference at § 550.205(b). (2) Motor Vehicle Emission Simulator (MOVES), User Guide, Assessment and Standards Division, Office of Transportation and Air Quality, EPA-420-B-14-055, July 2014, incorporated by reference at § 550.205(b). (3) User's Guide for the Final NONROAD2005 Model, EPA420-R-05-013, December 2005 incorporated by reference at § 550.205(b). (4) FIRE (Factor Information Retrieval System) Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, EPA 454-R-95-012, August 1995, incorporated by reference at § 550.187(c).	See comment under § 550.198(a).	Environmental Protection Agency, Office of Air and Radiation, 1200 Pennsylvania Ave, NW, MS6101A, Washington, DC 20460. (1) AP 42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, January 1995, incorporated by reference at § 550.205(b). (2) 40 CFR-61 Motor Vehicle Emission Simulator (MOVES), User Guide, Assessment and Standards Division, Office of Transportation and Air Quality, EPA-420-B-14-055, July 2014, incorporated by reference at § 550.205(b). (3) User's Guide for the Final NONROAD2005 Model, EPA420-R-05-013, December 2005 incorporated by reference at § 550.205(b). (4) FIRE (Factor Information Retrieval System) Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, EPA 454-R-95-012, August 1995, incorporated by reference at § 550.187(c).
	550.198(c)	Federal Aviation Administration (FAA), Office of Environment and Energy, (AEE-100), 800 Independence Avenue, SW, Washington, DC 20591. (1) Aviation Environmental Design Tool (AEDT) User's Guide, Version 2B, July 2015 (as amended) incorporated by reference at § 550.205(b). (2) Aviation Environmental Design Tool (AEDT), Version 2B, AEDT Standard Input File (ASIF) Reference Guide, May 2015 (as amended) incorporated by reference at § 550.205(b).	See comment under § 550.198(a).	Federal Aviation Administration (FAA), Office of Environment and Energy, (AEE-100), 800 Independence Avenue, SW, Washington, DC 20591. (1) Aviation Environmental Design Tool (AEDT) User's Guide, Version 2B, July 2015 (as amended) incorporated by reference at § 550.205(b). (2) Aviation Environmental Design Tool (AEDT), Version 2B, AEDT Standard Input File (ASIF) Reference Guide, May 2015 (as amended) incorporated by reference at § 550.205(b).
	550.198(d)	International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, or http://www.imo.org , or 44-(0)20-7735-7611. (1) Revised MARPOL (Marine Pollution) Annex VI Regulations for the Prevention of Air Pollution from Ships, and NOX Technical Code [NTC] 2008, 2009 edition, incorporated by reference at § 550.205(b). (2) Revised MARPOL Annex VI Regulations for the Prevention of Pollution from Ships ("2008 Annex VI"), incorporated by reference at § 550.205(b). (3) NOX Technical Code 2008, incorporated by reference at § 550.205(b).	See comment under § 550.198(a).	International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, or http://www.imo.org , or 44-(0)20-7735-7611. (1) Revised MARPOL (Marine Pollution) Annex VI Regulations for the Prevention of Air Pollution from Ships, and NOX Technical Code [NTC] 2008, 2009 edition, incorporated by reference at § 550.205(b). (2) Revised MARPOL Annex VI Regulations for the Prevention of Pollution from Ships ("2008 Annex VI"), incorporated by reference at § 550.205(b). (3) NOX Technical Code 2008, incorporated by reference at § 550.205(b).
	550.200(b)	Remove the definition of "Offshore vehicle"	No comment regarding this requirement.	N/A
What air emissions information must be submitted with my Plan (EPs, DPPs, DOCs, or application for a RUE, pipeline ROW, or lease term pipeline)?	550.205	All of the terms used in this section have the meaning described in § 550.302, unless defined in § 550.105. Except if excluded from the Air Quality Regulatory Program (AQRP) by paragraph (o) of this section, the requirements in this section apply to all plans, RUE, pipeline ROW, and lease term pipeline applications submitted in any area of the OCS in which the Secretary of the Interior has authority to regulate air quality on the OCS. Your plan must contain the following criteria air pollutant and major precursor air pollutant emissions information:	As explained in Section 2.8, the changes proposed in this rulemaking are significant and will require time for operators and BOEM staff to understand and implement. Therefore, it is critical that a phase-in period be incorporated into the implementation of the final rule. It is requested that additional time be provided to allow the regulated community and BOEM staff to develop compliance programs to meet the requirements of the final rule. This additional time is justified since the new requirements were not published as an Advanced Notice of Proposed Rulemaking which would have allowed more time for public comment, and allowed for more time for the development of compliance programs. Finally, as discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect offshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that RUE and ROW be deleted from this provision.	All of the terms used in this section have the meaning described in § 550.302, unless defined in § 550.105. Except if excluded from the Air Quality Regulatory Program (AQRP) by paragraph (o) of this section, the requirements in this section apply to all plans, RUE, pipeline ROW, and lease term pipeline applications submitted in any area of the OCS in which the Secretary of the Interior has authority to regulate air quality on the OCS. Your plan must contain the following criteria air pollutant and major precursor air pollutant emissions information:
	550.205(a)	Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan. This includes each emissions source used during the construction, installation (including well protection structure installation), and operation of any exploration, testing, drilling (including well test firing), development, or production equipment or facility or facilities (including every platform or manmade island included in your plan). You must account for the air pollutant emissions sources associated with all drilling operations, including workovers and recompletions, sidetracking and from pipeline construction. You must include emissions sources associated with your use of oil or gas produced from	The level of detail required for emissions sources described in plans is a significant concern in this proposed rule. It is appropriate to include substantial sources of emissions that account for the majority of OCS air emissions. However, as discussed above in our proposed addition of insignificant activity definition in § 550.105 and in Section 12.2 of our comments it is not practicable to include small, insignificant sources that do not make significant contributions to overall facility emissions. As such, we request that insignificant activities be excluded from the definition of emission sources. As discussed previously and in Section 12.4 of our comments, BOEM does not have the authority to regulate MSCs. Therefore, MSCs are requested to be removed from this provision.	Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan, to the extent practicable. This includes each emissions source used during the construction, installation (including well protection structure installation), and operation of any exploration, testing, drilling (including well test firing), development, or production equipment or facility or facilities (including every platform or manmade island included in your plan). You must account for the criteria air pollutant emissions sources associated with all drilling operations, including workovers and recompletions, sidetracking and from pipeline construction. You must include emissions sources associated with your use of oil or gas produced from your lease. The list of emissions sources must cover the duration of the plan's proposed activities. Emission sources deemed as insignificant activities as defined in § 550.105 are exempt from all air quality requirements in 30 CFR 550.

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		your lease. The list of emissions sources must cover the duration of the plan's proposed activities.	Inclusion of the sentence, "You must include emissions sources associated with your use of oil or gas produced from your lease" raises additional concerns. The proposed wording makes this requirement potentially limitless. It is possible that this sentence could be interpreted to include onshore sources such as refineries and chemical plants which are unrelated to OCS facilities, and over which BOEM has no jurisdiction. If the intent of this language is to capture how oil or natural gas may be used on an OCS facility for fuel or other purposes, emissions estimates for these activities would already be captured by as part of normal emission estimation practices, therefore the sentence is unnecessary. Finally, as discussed in Section 12.4 of our comments the proposed draft "AQR" spreadsheet contain material deficiencies to estimate emissions as defined in BOEM's proposed definition.	
	550.205(a)(1)	For each emissions source, you must identify, to the extent practicable: (i) Equipment type and number, manufacturer, make and model, location, purpose (i.e. the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics; (ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and (iii) The frequency and duration of the proposed use.	BOEM proposes to require identification of MSCs and their annual, rolling 12-month, and hourly emissions, and to identify what other facilities would be served by a given MSC. With the exception of vessels engaged in geological and geophysical exploration (see 43 U.S.C. §1340(a)), BOEM's regulatory authority under OCSLA is limited to "artificial islands, ..., and ..., installations, ..., permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources therefrom." ¹ This does not include vessels (except perhaps those attached to such artificial islands and installations for the purpose of exploring for, developing, or producing OCS resources). OCS operators contract for services, but cannot be certain which vessel a contractor will assign – certainly not at the point exploration or development plans are being submitted. Likewise, identification of other offshore facilities to be served by a given MSC is unknown. Furthermore, BOEM asks that applicants identify the emissions per trip and multiply those emissions by the number of trips per year to identify annual emissions; this is impossible to project because there is no way to anticipate what route a support vessel will take years in advance of the trip. Nor is it practicable for an OCS operator to predict the types of support vessel activities that may be necessary over a 10 year span. Given these uncertainties, an operator cannot know what fraction of the trip emissions should be attributed to its facility. Nevertheless, BOEM's attempt to impose such MSC regulatory requirements demonstrates a lack of understanding of the support vessel operations in the GOM. Furthermore, as discussed in Section 12.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, we request that MSCs be specifically excluded from this provision. Finally, as discussed in comments to § 550.205(a) above, insignificant activities should be exempt from data collection activities. In addition, the AQR spreadsheets that accompany the proposed rule are not constructed such that this information can be collected. See Section 12.4 of our comments for list of items BOEM should address.	For each emissions source, excluding MSCs and insignificant activities, you must identify, to the extent practicable: (i) Equipment type and number, manufacturer, make and model, location, purpose (i.e., the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics; (ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and (iii) The frequency and duration of the proposed use.
	550.205(a)(2)	For every engine on each facility, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest maximum rated capacity for the type of engine which you will use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.	See comments under § 550.205(a)(1) above.	For every engine on each facility, except those emissions sources excluded as insignificant activities, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest emissions for the type of engine which you will plan to use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.

¹ 43 U.S.C. § 1333(a)

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	550.205(a)(3)	For engines on MSCs, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available, indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.	As discussed in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, we request that this provision be deleted from the regulation.	For engines on MSCs, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available, indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.
	550.205(a)(4)	For offshore vehicles, you must provide the information specified under paragraph (a)(1) of this section. If the actual offshore vehicle engine types needed for calculating emissions are unknown or cannot be verified, assume an offshore vehicle possessing the maximum emissions for the types of offshore vehicles you would typically use for your planned operations.	As discussed in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, we request that this provision be deleted from the regulation.	For offshore vehicles, you must provide the information specified under paragraph (a)(1) of this section. If the actual offshore vehicle engine types needed for calculating emissions are unknown or cannot be verified, assume an offshore vehicle possessing the maximum emissions for the types of offshore vehicles you would typically use for your planned operations.
	550.205(a)(5)	For any emissions source not described above, you must provide all information needed to calculate and verify the associated emissions, such as volumes vented, volumes flared, size of tank, and number of components.	See comments under § 550.205(a) above.	For any emissions source, excluding insignificant activities, not described above, you must provide all information needed to calculate and verify the associated emissions, such as volumes vented, volumes flared, size of tank, and number of components.
	550.205(b)	Emissions factors. For each emissions source identified under paragraph (a) of this section, you must identify the most appropriate emissions factors used to calculate the emissions for every criteria air pollutant and major precursor air pollutant emitted by that source.	<p>Manufacturer engine certifications and performance guarantees are designed to meet pollutant-specific emissions criteria. Additionally, other non-engine emissions source factors are typically pollutant specific. As such, we request changes to clarify that this evaluation is done on a pollutant basis. This would alleviate concerns that engine certifications or emissions testing that don't address all pollutants could be used in conjunction with other types of emission factors (i.e., AQR default factors.)</p> <p>Furthermore, some emission calculations do not lend themselves to a "published" emission factor. The emission factor can be derived for the site specific source information. This would include glycol dehydrators, crude oil/condensate storage tanks, and amine gas sweetening units. We request that BOEM clarify that model/software (e.g., GLYCALC, E&P Tanks) used to calculate emissions from glycol dehydrators, crude oil/condensate storage tanks, and amine gas sweetening units are allowed under (b)(2)(ii).</p> <p>As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria and precursor pollutants.</p>	Emissions factors. For each emissions source identified under paragraph (a) of this section, you must identify for each criteria and precursor pollutant the most appropriate emissions factors used to calculate the emissions for every criteria air pollutant and major precursor air pollutant emitted by that source.
	550.205(b)(1)	Emissions testing. You may use actual emissions amounts as measured from emissions testing conducted on a specific emissions source, in lieu of the standards or emissions factors for that source which are described in paragraph (b)(2) of this section. However, if none of the methods in paragraph (b)(2) of this section are applicable, you must conduct stack testing on the emissions source to determine the appropriate emissions factor. The data from stack testing may be used only for the engine for which the stack testing was conducted. When determining the emissions factors through testing, you must consider: (i) Test points and procedures. (A) In general, test points should be devised based on actual operations as opposed to using the test points and engine loads contained in one of the various marine duty cycles. If, based on the unique circumstances of the proposed project, this is impracticable, an alternative approach for defining test points may be implemented with the approval of the Regional Supervisor. It cannot be assumed that emissions per hour or emissions per kW hour or horse-power hour from large main engines on drill ships and platforms are highest during full load or near-full load operation. The emissions factor and emission per hour or emissions per kW hour or horse-power hour for the operation that is actually expected should be determined, and the emissions under 90% load should be used only if emissions at this load are the highest and thus conservative. (B) Testing should be done consistent with the procedures outlined in 40 CFR part 53 to the maximum extent practicable.	<p>In general, we support the use of actual emissions as measured by emissions testing as an option to estimate emissions in the plan. This subsection presents conflicting language whereby in some places, the focus is on emissions source and in other places the focus is on engines. It is requested that a consistent use of the term emission source be used in this subsection.</p> <p>The inclusion of specific language on test points and procedures is unnecessarily specific and since the basis for the emission factor will have to be identified in the plan submittal, BOEM will have the opportunity to review and comment on the acceptability of the emissions test data, including test points and procedures as part of the plan approval process.</p> <p>We request that BOEM include language that allows for adjustments of measured SO2 emissions (if warranted) based on the sulphur fuel contents which would be identified as required in § 550.205(a). Inclusion of such language will alleviate the need for re-testing if the sulphur levels in fuel differ from what was measured during the emissions test. Alternatively, BOEM could elect to offer the use of a mass-balance approach to estimating SO2 emissions based on the sulphur levels in the fuel types. Many state and federal agencies accept a similar methodology to estimate SO2 emissions.</p> <p>Furthermore, many operators have multiple versions of the same equipment across their portfolio. It would be beneficial to the OCS operators if the BOEM would allow for the use of emissions test results on similar equipment (i.e., same make and model.)</p> <p>Finally, it should be noted that 40 CFR part 53 refers to Ambient Air Monitoring Reference and Equivalent Methods. These methods are not used for stack testing. The reference should be for applicable test methods in 40 CFR part 60, Appendix A.</p>	Emissions testing. You may use actual emissions amounts as measured from emissions testing conducted on a specific emissions source, in lieu of the standards or emissions factors for that source which are described in paragraph (b)(2) of this section. However, if none of the methods in paragraph (b)(2) of this section are applicable, you must conduct stack testing on the emissions source to determine the appropriate emissions factor. The data from stack testing may be used only for the engine emission source for which the stack testing was conducted. When determining the emission factors through testing, you must consider: (i) Test points and procedures. (A) In general, test points should be devised based on actual operations as opposed to using the test points and engine loads contained in one of the various marine duty cycles. If, based on the unique circumstances of the proposed project, this is impracticable, an alternative approach for defining test points may be implemented with the approval of the Regional Supervisor. It cannot be assumed that emissions per hour or emissions per kW hour or horse-power hour from large main engines on drill ships and platforms are highest during full load or near-full load operation. The emissions factor and emission per hour or emissions per kW hour or horse-power hour for the operation that is actually expected should be determined, and the emissions under 90% load should be used only if emissions at this load are the highest and thus conservative. (B) Testing should be done consistent with the procedures outlined in 40 CFR part 60, Appendix A to the maximum extent practicable. Where the unique circumstances or requirements of the proposed operations make such procedures impracticable, alternative procedures may be implemented with the approval of the Regional Supervisor. As appropriate, you must use the General Provisions for Determining Standards of Performance for New Stationary Sources, at 40 CFR 60.8. (ii) Fuel. You must ensure that the fuel used in the testing to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation and that the sulphur content of the fuel is the same as that which will be used in the engine. You may adjust your measured SO2 emissions to account for the sulphur levels identified for the relevant emission source.

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		Where the unique circumstances or requirements of the proposed operations make such procedures impracticable, alternative procedures may be implemented with the approval of the Regional Supervisor. As appropriate, you must use the General Provisions for Determining Standards of Performance for New Stationary Sources, at 40 CFR 60.8. (ii) Fuel. You must ensure that the fuel used in the testing to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation and that the sulphur content of the fuel is the same as that which will be used in the engine.		identified in 550.205(a)
	550.205(b)(2)(i)	In the event that you elect not to measure the actual emissions for any given emissions source, select an emissions factor from one of the following references (references are listed in priority order; you may use a method only if all the methods identified above it are not available): (i) You may use the emission factor(s) that are vendor-guaranteed or provided by the manufacturer of the specific emissions source, if available; where a manufacturer has not provided an emissions factor for the emissions source you propose to use, you may use a manufacturer's emissions factor for a similar source only if you can demonstrate to the satisfaction of the Regional Supervisor that the emissions generated by your emissions source are the same as or lower than that for which a manufacturer's emissions factor is available. If you elect to use vendor-guaranteed or manufacturer data, you must demonstrate that: (A) The fuel used by the manufacturer to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation; and (B) The actual engine has not been modified outside the configuration used to generate the emission factors; thus, the emission factors used in the plan must represent the actual pattern of use for that equipment in operations.	Rather than restricting operators to a priority list of emission factors, the list included in § 550.205(b)(2)(i)-(vi) should be presented as a list of emission estimation methodology options, either within the rule text or as a separate guidance document. In reviewing various state and federal agency permitting programs, the process by which an emission factor is selected is at the discretion of the owner/operator of the facility. Onshore facilities are typically not restricted to a hierarchy priority of emission estimation methodologies. In light of all the possible emission estimation methodologies, and to account for advancements in such methodologies, BOEM should leave selection of the methodology to the OCS operators. Also, by including such a detailed list of emission estimation methodologies as part of the rule text, BOEM is limiting their ability to make changes to the list without triggering the rulemaking process. It is requested that BOEM remove this very prescriptive and limiting process. As per § 550.205(b)(3), BOEM retains the ability to review the selected emission factor and require the use of a different emission factor or to require emissions testing if a more appropriate factor is not available.	In the event that you elect not to measure the actual emissions for any given emissions source, you may select an emissions factor from one of the following references subject to agency approval (references are listed in priority order; you may use a method only if all the methods identified above it are not available): (i) You may use the emissions factor(s) that are vendor-guaranteed or provided by the manufacturer of the specific emissions source, if available; where a manufacturer has not provided an emissions factor for the emissions source you propose to use, you may use a manufacturer's emissions factor for a similar source only if you can demonstrate to the satisfaction of the Regional Supervisor that the emissions generated by your emissions source are the same as or lower than that for which a manufacturer's emissions factor is available. If you elect to use vendor-guaranteed or manufacturer data, you must demonstrate that: (A) The fuel used by the manufacturer to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation; and (B) The actual engine has not been modified outside the configuration used to generate the emission factors; thus, the emission factors used in the plan must represent the actual pattern of use for that equipment in operations.
	550.205(b)(2)(ii)	You may use emissions factors generated from source tests required by the USEPA OCS permits as BOEM emission estimates for a specific rig. If emissions factors were not generated through testing for a particular engine, emissions factors generated from a recent and similar permit engine may be used. Data from a rig from the same manufacturer, having an engine of the same model and year is generally allowed, unless the Regional Supervisor has a reason to believe that such data may not be accurate or reliable.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, we request that this subsection be eliminated. If BOEM elects not to remove this section, we seek to clarify that the relevant manufacturer should be the engine manufacturer and not the rig manufacturer. Where the term rig appears in this subsection, we would request the term engine be used. Furthermore, if BOEM elects not to remove this section, it should address the mechanism by which the various operators will have knowledge of which engines may have had source tests conducted pursuant to an USEPA OCS permit. This information is not readily available to all operators.	You may use emissions factors generated from source tests required by the USEPA OCS permits as BOEM emission estimates for a specific rig. If emissions factors were not generated through testing for a particular engine, emissions factors generated from a recent and similar permit engine may be used. Data from a rig from the same manufacturer, having an engine of the same model and year is generally allowed, unless the Regional Supervisor has a reason to believe that such data may not be accurate or reliable.
	550.205(b)(2)(iii)	You may use a model or table, as appropriate, developed by the USEPA or FAA, if available and appropriate to the emissions source, and you may use the emissions factors from that model or table. (A) For commercial marine engines operating aboard MSC, excluding vehicles and aircraft, apply emission factors based on the classification of the engine (i.e., category 1, category 2, and category 3), the year the engine was manufactured, and the maximum engine power expressed in kW. Some category 3 engine emission factors are based on rpm rather than maximum engine power. Engine category, year, model, and emission factors, by kW power rating, are given in 40 CFR 1042.101 for category 1 and category 2 commercial engines and consider the useful life provisions of each engine category. Engine category, year, model, and emission factors, by rpm rating, are given in 40 CFR 1042.104 for category 3 commercial marine engines, and also consider the useful life provisions for each engine category. (B) For non-road equipment used on the drill ships or platforms, non-road emission factors, rather than marine engine emission factors may be used. The primary source for these emission factors is the NONROAD portion of the Motor Vehicle Emission	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments: - We request BOEM to allow the use of process modelling to estimate emissions, specifically for storage containers for which the USEPA TANKS 4.0 program is a poor emissions estimation tool; - The USEPA TANKS program is a useful tool for regularly (i.e., cylindrical) shaped storage containers. Storage containers on OCS facilities may come in various shapes that will not easily be represented in the TANKS program. Given the minimal emissions of most storage containers on OCS facilities, we request the use of default emission factor similar to that employed in the current AGR emission spreadsheet; note that many storage containers may fit within the proposed insignificant activity list (see comments to 550.205(a)) and therefore, emissions estimation may not be warranted. - We request BOEM to allow models or tables approved by USEPA or FAA. "You may use a model or table, as appropriate, developed or approved by the USEPA or FAA, if available and appropriate to the emissions source, and you may use the emissions factors from that model or table." - The referenced MOVES model cited in the proposed rule may not be a user friendly model for operators and we request that the use of a default emission factor similar to	You may use a model or table, as appropriate, developed by the USEPA or FAA, if available and appropriate to the emissions source, and you may use the emissions factors from that model or table. (A) For commercial marine engines operating aboard MSC, excluding vehicles and aircraft, apply emission factors based on the classification of the engine (i.e., category 1, category 2, and category 3), the year the engine was manufactured, and the maximum engine power expressed in kW. Some category 3 engine emission factors are based on rpm rather than maximum engine power. Engine category, year, model, and emission factors, by kW power rating, are given in 40 CFR 1042.101 for category 1 and category 2 commercial engines and consider the useful life provisions of each engine category. Engine category, year, model, and emission factors, by rpm rating, are given in 40 CFR 1042.104 for category 3 commercial marine engines, and also consider the useful life provisions for each engine category. (B) For non-road equipment used on the drill ships or platforms, non-road emission factors rather than marine engine emission factors may be used. The primary source for these emission factors is the NONROAD portion of the Motor Vehicle Emission Simulator (MOVES) model (http://www.epa.gov/ostaq/models/moves/index.html), as incorporated by reference at § 550.108. Depending on the type of engine, the NONROAD2008A Model may also be used, as incorporated by reference at § 550.108. That model is available at http://www.epa.gov/ostaq/moves/index.html . (C) For storage tanks, use the USEPA's TANKS model, or the most recent USEPA-recommended update or replacement to generate emission factors, such as the AP-43

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		<p>Simulator (MOVES) model (http://www.epa.gov/otaq/models/moves/index.htm), as incorporated by reference at § 550.198. Depending on the type of engine, the NONROAD2008A Model may also be used, as incorporated by reference at § 550.198. That model is available at http://www.epa.gov/otaq/nonroad.html.</p> <p>(C) For storage tanks, use the USEPA's TANKS model, or the most recent USEPA-recommended update or replacement, to generate emission factors, such as the AP-42 Compilation of Emissions Factors, Chapter VII, incorporated by reference at § 550.198.</p> <p>(D) In the event that you are required to report emissions data from aircraft, use emissions factors generated by the AEDT, incorporated by reference at § 550.198, or from another appropriate model, or set of models, approved by the FAA, in the event that the AEDT does not contain emissions factors for the relevant aircraft proposed in your plan. AEDT emissions factors are available at: http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aedt/</p>	<p>that employed in the current AQR spreadsheet.</p> <ul style="list-style-type: none"> - Some operators may have diesel engines that are certified to meet the requirements in 40 CFR 60 Subpart IIII and operated in a certified manner. We request the use of applicable emission factors in 40 CFR 60 Subpart IIII, Tables 1 – 4. This could affect backup and emergency diesel engine drivers for generators, pumps, air compressors. - Various sections of the proposed rule discuss emissions from "flashing". The documents incorporated by reference (e.g., EPA TANKS model and AP-42) do not calculate "flash" emissions from crude oil condensate or produced water; however, there are multiple other generally accepted mechanisms (e.g., Peng-Robinson equation of state models - PROMAX, HYSIS, PROSIM, VMGSim) or API 4697 E&P Tanks Ver 3 program for flashing calculations. These models are approved by USEPA for 40 CFR 98 Subpart W calculations (REF: 40 CFR 98.233(j)(1)) and for NSPS OOOO in 40 CFR 60 Subpart OOOO (REF: 40 CFR 60.5365(c)). For GOADS, BOEM used the Vasquez-Beggs equations for flash calculations for crude oil and condensate. - Similarly, to the "flashing" discussion above, the proposed rule does not include a reference document that is capable of estimating glycol dehydration unit still column vent and flash tank (gas-condensate-glycol separator) emissions. GRI-GLYCalc model is an USEPA approved model for glycol dehydration unit emission calculations – 40 CFR 63 Subparts HH and HHH. Also, GLYCalc is the model used for GOADS emission calculations since 2000. - We request that BOEM allow for use of operations and engineering judgment (in lieu of an emission factor) to estimate the volume of gas expected to be combusted in a flare or vented from an atmospheric vent. This would cover such sources as compressor blowdowns, miscellaneous sources (pneumatic devices in natural gas service) routed to flare or vent. - There are some scenarios by which direct measurement of vented volumes should be acceptable to generate an emission factor. The amount of vapors liberated during lightning operation may be measured to determine gas liberated per volume of oil loaded to generate a gas to oil ratio (GOR) for the emission factor. This could require a sample of the vapors to calculate the mass of emissions for vapor vented. The proposed rule allows use of equations in the document cited: AP-42, 5.2 Transportation and Marketing of Petroleum Liquids. 	<p>Compilation of Emissions Factors, Chapter VII, incorporated by reference at § 550.198.</p> <p>(D) In the event that you are required to report emissions data from aircraft, use emissions factors generated by the AEDT, incorporated by reference at § 550.198, or from another appropriate model, or set of models, approved by the FAA, in the event that the AEDT does not contain emissions factors for the relevant aircraft proposed in your plan. AEDT emissions factors are available at: http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aedt/</p>
	550.205(b)(2)(iv)	<p>You may use an emission factor from a published study conducted by a reputable source, such as the California Air Resources Board, a university, or research agency, if such source yields reliable emission factors or formula(s) to calculate emissions factors for certain types of engines and equipment other than for the large main engines on drilling ships and drill platforms and for locomotive-sized engines powering cranes. If an emission study is used, the study must cover representative engines, fuels, and duty cycles.</p>	<p>As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments on this subsection.</p> <ul style="list-style-type: none"> - BOEM should provide a specific size threshold instead of using terms such as "large" or "locomotive size" engines. In other sections of the proposed rule, BOEM utilizes the 900 kW threshold. 	<p>You may use an emission factor from a published study conducted by a reputable source, such as the California Air Resources Board, a university, or research agency, if such source yields reliable emission factors or formula(s) to calculate emissions factors for certain types of engines and equipment other than for the large main engines on drilling ships and drill platforms and for locomotive-sized engines powering cranes. If an emission study is used, the study must cover representative engines, fuels, and duty cycles.</p>
	550.205(b)(2)(v)	<p>For non-U.S. flagged vessels having non-USEPA-certified, MARPOL-certified marine engines, you may use the MARPOL Annex VI standards, available from the International Maritime Organization, incorporated by reference at § 550.198, or the Revised MARPOL Annex VI, Regulations for the Prevention of Pollution from Ships, incorporated by reference at § 550.198, as appropriate taking vessel flag as well as engine size into account when determining the emission factor that should apply to an engine. With respect to calculations specifically for NO_x emissions or emissions factors, any reporting must comply with the NO_x Technical Code [NTC] 2008 incorporated by reference at § 550.198. If this method is used, the plan must account for any differences in the sulphur limits of the fuel being used and the sulphur limit of the fuel used for emission testing. All fuel used by the subject drilling ships and offshore platforms must either be purchased in the U.S. or comply with applicable CAA fuel emissions requirements, unless the lessee or operator can demonstrate that it has properly accounted for any differences in emissions that may result from the use of non-U.S. fuel.</p>	<p>As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we request the following comments be considered on this subsection.</p> <ul style="list-style-type: none"> - EIAPP certificates would be issued based on test results for a parent engine. These EIAPP certificates identify the parent engine emission test result as well as the relevant Annex VI standard. The proposed rule allows for use of the Annex VI standards but is silent on the acceptability of the listed parent engine emission factor identified in the EIAPP certificate. We request BOEM allow the use of the emission factors as stated on EIAPP certificates. 	<p>For non-U.S. flagged vessels having non-USEPA-certified, MARPOL-certified marine engines, you may use the MARPOL Annex VI standards, available from the International Maritime Organization, incorporated by reference at § 550.198, or the Revised MARPOL Annex VI, Regulations for the Prevention of Pollution from Ships, incorporated by reference at § 550.198, as appropriate taking vessel flag as well as engine size into account when determining the emission factor that should apply to an engine. With respect to calculations specifically for NO_x emissions or emissions factors, any reporting must comply with the NO_x Technical Code [NTC] 2008 incorporated by reference at § 550.198. If this method is used, the plan must account for any differences in the sulphur limits of the fuel being used and the sulphur limit of the fuel used for emission testing. All fuel used by the subject drilling ships and offshore platforms must either be purchased in the U.S. or comply with applicable CAA fuel emissions requirements, unless the lessee or operator can demonstrate that it has properly accounted for any differences in emissions that may result from the use of non-U.S. fuel.</p>

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	550.205(b)(2)(vi)	For a natural gas-powered engine of any rated capacity, or for a non-road diesel-powered engine with a maximum rated capacity less than 900 kW, or for a non-engine emissions source, you may use the appropriate emissions factor from the Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Emissions Sources, or any update thereto, incorporated by reference at § 550.198; or,	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments on this subsection. <ul style="list-style-type: none"> - There is no explanation in the proposed rule that addresses the proposed restriction by which a non-road diesel engine on a platform greater than 900 kW cannot use AP-42. We request that the rating threshold be removed and the option to use AP-42 emission factors be retained for all non-road diesel engines. 	For a natural gas-powered engine of any rated capacity, or for a non-road diesel-powered engine with a maximum rated capacity less than 900 kW, or for a non-engine emissions source, you may use the appropriate emissions factor from the Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Emissions Sources, or any update thereto, incorporated by reference at § 550.198; or,
	550.205(b)(2)(vii)	If you elect to use the methods described in paragraph (b)(2)(v) or (vi) of this section, you must take appropriate account of the deterioration in the performance of the equipment based on its age and the potential variation of the actual emissions from the standard to account for the maximum potential emissions that the emissions source may emit. Given that equipment tends to operate less efficiently over time, you should make an appropriate upward adjustment in the emissions estimates for older equipment. At any time you revise your plan, including resubmissions every ten years, you must consider the age of the equipment, adjust for any change in operating efficiency, and provide the associated emissions factors in your revised or resubmitted plan, as applicable.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments on this subsection. <ul style="list-style-type: none"> - It is not feasible to make appropriate upward adjustments in emission estimates for older equipment. Emissions of a completely overhauled engine may match that of a relatively new engine so an engine's age may not necessarily result in deterioration of an engine's emissions performance. - Furthermore, there is little to no actual emissions test data that supports BOEM's assertion that emissions increase on older equipment. The USEPA's compilation of emission factors for various emissions sources (AP-42) does not provide for age-based deterioration adjustments to emission factors. We request BOEM to remove language related to age-based adjustments to emission factors. - If BOEM requires an age-based adjustment of emission factors, we request BOEM to only require the use of deterioration factors when they have been developed by the manufacturer. For example, 40 CFR 1042.245 requires manufacturers to develop deterioration factors for certain categories of engines. Consistent with EPA's approach, the requirement to develop such factors should be placed on the engine manufacturers, not the engine purchaser. Alternatively, if BOEM insists upon requiring operators to account for engine deterioration with regards to emissions, BOEM should first conduct an Environmental Study (Pursuant to the Environmental Studies Program) to establish whether engine age corresponds to deterioration of emissions performance. 	If you elect to use the methods described in paragraph (b)(2)(v) or (vi) of this section, you must take appropriate account of the deterioration in the performance of the equipment based on its age and the potential variation of the actual emissions from the standard to account for the maximum potential emissions that the emissions source may emit. Given that equipment tends to operate less efficiently over time, you should make an appropriate upward adjustment in the emissions estimates for older equipment. At any time you revise your plan, including resubmissions every ten years, you must consider the age of the equipment, adjust for any change in operating efficiency, and provide the associated emissions factors in your revised or resubmitted plan, as applicable.
	550.205(b)(3)	If the Regional Supervisor has reason to believe that any air emissions factor used in your plan is inappropriate, or new or updated information on emissions factors becomes available, the Regional Supervisor may require you to use a different emissions factor for any emissions source for any air pollutant. The Regional Supervisor may require you to perform stack testing, in accordance with paragraph (b)(1) of this section, or some other form of validation to verify the accuracy of an emissions factor.	No comments regarding this paragraph.	N/A
	550.205(b)(4)	If you propose to utilize an engine or equipment that is not certified by the USEPA for use in the U.S., you may not use a USEPA emissions factor intended to apply to a certified engine or equipment. If you propose to utilize an engine or equipment that is USEPA-certified, then you must submit documentation of its certification.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated.	If you propose to utilize an engine or equipment that is not certified by the USEPA for use in the U.S., you may not use a USEPA emissions factor intended to apply to a certified engine or equipment. If you propose to utilize an engine or equipment that is USEPA-certified, then you must submit documentation of its certification.
	550.205(b)(5)	If your projected emissions include emissions for a U.S. flagged vessel, you must submit documentation of the USEPA-issued Certificate of Conformity for each engine on the vessel.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. Furthermore, the proposed language is an example of overly prescriptive regulatory program whereby BOEM is requesting demonstration of compliance with another federal agency.	If your projected emissions include emissions for a U.S. flagged vessel, you must submit documentation of the USEPA-issued Certificate of Conformity for each engine on the vessel.
	550.205(b)(6)	If you propose to use any non-U.S. engine or equipment on a non-U.S. flag vessel that is not MARPOL-compliant, you may not use an emissions factor intended to apply to a MARPOL-compliant engine or equipment.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated.	If you propose to use any non-U.S. engine or equipment on a non-U.S. flag vessel that is not MARPOL-compliant, you may not use an emissions factor intended to apply to a MARPOL-compliant engine or equipment.
	550.205(c)	Facility emissions. For each criteria and major precursor air pollutant, calculate the projected annual emissions for each of your facilities, the maximum 12 month rolling sum of facility emissions and the maximum projected peak hourly emissions using the following procedures:	As discussed in Section 8.8 of our comments, EPA assesses compliance with NAAQS using calendar block averages, not running or rolling averages. Therefore, it is requested that BOEM remove the requirement to quantify emissions for a maximum 12 month period. <p>Furthermore, we have reviewed multiple state agency permitting programs and EPA's permitting program for the Eastern Gulf of Mexico and have not identified an analogue for the calculation of maximum 12-month rolling sum of facility emissions as part of the application process that BOEM has proposed. Typically, a permit application for an onshore facility would provide estimates of the potential to emit on a calendar-year basis.</p>	Facility emissions. For each criteria and major precursor air pollutant, calculate the annual projected annual emissions for each of your facilities, the maximum 12-month rolling sum of facility emissions and the maximum peak hourly projected peak-hourly emissions using the following procedures:

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	550.205(c)(1)	Calculate total emissions generated annually by each emissions source on or physically connected to each of the facilities described in your plan that would result from the construction, installation, operation, or decommissioning of the facility. Such calculations should be done for each year that the plan states that the operator proposes to engage in operating activities, up to ten years. This calculation should be based on the maximum rated capacity of each emissions source associated with the facility, or the capacity that generates the highest rate of emissions, and the facility's maximum potential projected annual emissions, using the methods and procedures specified under paragraphs (a) and (b) of this section.	We request changes to this provision to improve clarity and to ensure emissions from OCS facilities are not over estimated. Based on the proposed wording in this provision it would imply that OCS facilities routinely run at maximum rated capacity over an entire calendar-year. Such an approach would grossly exaggerate potential emissions and ensure that many plans will exceed the EET values, where in practice, the actual emissions occurring under these plans may be significantly lower. As acknowledged by BOEM in multiple places in the preamble, this is a common practice under the existing regulatory framework as a mechanism to reduce emissions below the EET values and a concept that BOEM intended to carry forward. Additionally, the provisions of § 550.205(a)(2) allow for such measures; however, further clarity on this topic would be beneficial. As such, we have proposed revisions to clarify that projected emission estimates should be based on operators' annual maximum expected operations and not solely based on the maximum rated capacity of each emission source. This change will add further clarity that the use of self-mitigations measures to reduce the projected emissions by representing the anticipated operating rates and/or fuel usage levels by emission sources covered by the plan is acceptable. Additionally, we have proposed similar changes to the definition of projected emissions as listed in § 550.302(b). Additional revisions are requested to be consistent with the requested revisions to the definitions of <i>projected emissions</i> and <i>facility</i> as discussed in § 550.302(b) below. Finally, consistent with the above proposed change requested in § 550.187(a), we request that the term "designated operator" be used to ensure that it is clear that the designated operator of any OCS facility is the responsible party.	Calculate total projected emissions generated annually by each emissions source on or physically connected to each of the facilities described in your plan that would result from the construction, installation, operation, or decommissioning of the facility . Such calculations should be done for each year that the plan states that the designated operator proposes to engage in operating activities, up to ten years. This calculation should be based on the annual maximum-rated capacity-expected-operations of each emissions source associated with the facility, as the capacity that generates the highest rate of emissions, and the facility's maximum potential projected annual emissions , using the methods and procedures specified under paragraphs (a) and (b) of this section.
	550.205(c)(2)	Calculate the maximum 12-month rolling sum of emissions from each emissions source on or physically connected to each facility and the maximum 12-month rolling sum of emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility. Identify the 12-month period used for this calculation. This should be the 12-month period during which your facility generates the highest amount emissions over the life of your plan.	Requested revisions to be consistent with our comments to § 550.205(c) whereby we request the removal of the 12-month rolling sum and § 550.302(b) whereby we requested changes to the definitions of <i>projected emissions</i> and <i>facility</i> .	Calculate the projected maximum annual calendar-year 12-month rolling sum of emissions from each emissions source on or physically connected to each facility and the maximum 12-month rolling sum of emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility . Identify the calendar year with the maximum annual projected emissions that would result from the construction, installation, operation, or decommissioning of the facility 12-month period used for this calculation. This should be the 12-month period calendar year during which your facility generates the highest amount of emissions over the life of your plan.
	550.205(c)(3)	Calculate the maximum projected peak hourly emissions from each emissions source on or physically connected to each facility and the maximum projected peak hourly emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility.	The requested changes are intended to add further clarity and to be consistent with the requested revisions to the <i>projected emissions</i> and <i>facility</i> definitions as described in § 550.302(b) below.	Calculate the maximum peak hourly projected peak-hourly emissions from each emissions source on or physically connected to each facility and the maximum peak hourly projected peak-hourly emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility .
	550.205(d)	<i>Attributed emissions.</i> For each criteria and major precursor air pollutant, calculate the attributed projected annual emissions for each of your MSCs, the maximum 12-month rolling sum of each MSC's emissions, and the maximum projected peak hourly emissions for each MSC, using the following procedure:	As discussed in Section 1.2.4 of our comments document BOEM does not have authority to regulate MSCs. As such, we request that this provision be removed from the proposed regulation.	<i>Attributed emissions.</i> For each criteria and major precursor air pollutant, calculate the attributed projected annual emissions for each of your MSCs, the maximum annual calendar-year 12-month rolling sum of each MSC's emissions, and the maximum projected peak hourly emissions for each MSC, using the following procedure:
	550.205(d)(1)	For each facility described in your plan, identify the MSCs that will be used to support that facility. To the extent practicable, identify the other facilities that each MSC will support.	See comments to § 550.205(d) above regarding MSCs. Furthermore, it should be noted that operators can rarely predict which exact vessels will be utilized at the time of plan development. Changes in project schedules, work load (short term contracts), vessels dedicated to a role (i.e., high volume, supplies, etc), and availability of a MSC are a few factors used to determine what vessel will be mobilized at the start of a project. These vessels are potentially not even on contract when a plan is submitted and with around 900 different vessels (work, crew, well evaluation, well stimulation, barges, etc.) supporting different types of operations in the GoM it is impractical for operators to predict every vessel(s) which will be utilized in a plan. Furthermore, BOEM asks that applicants identify the emissions per trip and multiply those emissions by the number of trips per year to identify annual emissions; this is impossible to project because there is no way to anticipate what route a support vessel will take years in advance of the trip. Nor is it practicable for an OCS operator to predict the types of support vessel activities that may be necessary over a 10-year span.	For each facility described in your plan, identify the MSCs that will be used to support that facility. To the extent practicable, identify the other facilities that each MSC will support.

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	550.205(d)(2)	For each MSC referred to in paragraph (d)(1) of this section: (i) An MSC that is intended to remain at sea continuously (i.e., a vessel that does not typically return to port on a regular basis) should be assumed to operate on a 24-hour basis for any day the MSC operates in the waters overlying the OCS or State submerged lands. (ii) For all other MSCs, calculate the emissions per trip, irrespective of what other facilities the MSC may also service on each trip. These emissions include all the emissions generated between the time that the MSC leaves its port or home base until it returns (i.e., support emissions per trip). All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions, if greater, for each emissions source on the MSC.	See comments to § 550.205(d) above regarding MSCs.	For each MSC referred to in paragraph (d)(1) of this section: (i) An MSC that is intended to remain at sea continuously (i.e., a vessel that does not typically return to port on a regular basis) should be assumed to operate on a 24-hour basis for any day the MSC operates in the waters overlying the OCS or State submerged lands. (ii) For all other MSCs, calculate the emissions per trip, irrespective of what other facilities the MSC may also service on each trip. These emissions include all the emissions generated between the time that when the MSC is within 25 miles of the facility leaves its port or home base until it returns (i.e., support emissions per trip). All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions, if greater, for each emissions source on the MSC.
	550.205(d)(3)	Multiply the emissions per trip from paragraph (d)(2) of this section by the number of trips the MSC will make during the 12 month period described in paragraph (c)(2) of this section to get the total support emissions for that MSC. If the MSC will remain at sea continuously, multiply the emissions it will generate per day by the number of days that it will operate in support of your facility during the 12 month period described in paragraph (c)(2) of this section.	See comments to § 550.205(d) above regarding MSCs.	Multiply the emissions per trip from paragraph (d)(2) of this section by the number of trips the MSC will make during the 12-month period described in paragraph (c)(2) of this section to get the total support emissions for that MSC. If the MSC will remain at sea continuously multiply the emissions it will generate per day by the number of days that it will operate in support of your facility during the 12-month period described in paragraph (c)(2) of this section.
	550.205(d)(4)	If the MSC provides support only to your facility, then you must attribute the MSC's total support emissions to that facility.	See comments to § 550.205(d) above regarding MSCs.	If the MSC provides support only to your facility, then you must attribute the MSC's total support emissions to that facility.
	550.205(d)(5)	For each MSC described in paragraph (d)(1) of this section that supports multiple facilities, you may attribute the total support emissions for that MSC to your facility or you may attribute a portion of its total support emissions to your facility (i.e., calculate the attributed emissions for that MSC) using the following procedure: (i) Subtract the emissions you can document that should be reasonably allocated to other facilities from the total support emissions calculated under paragraph (d)(3) of this section for that MSC; or (ii) If it is not practicable to use the method in paragraph (d)(5)(i) of this section, divide the total support emissions calculated under paragraph (d)(3) of this section by the lowest number of facilities that the MSC will service on a typical trip; or (iii) Where it is not practicable to use either paragraph (d)(5)(i) or (ii) of this section, calculate the greater of: (A) The emissions that would be generated by the MSC traveling round-trip between the port or home base and the facility; or (B) The emissions generated by the MSC for the entire time it will operate within 25 statute miles of the facility.	See comments to § 550.205(d) above regarding MSCs.	For each MSC described in paragraph (d)(1) of this section that supports multiple facilities, you may attribute the total support emissions for that MSC to your facility or you may attribute a portion of the total support emissions to your facility (i.e., calculate the attributed emissions for that MSC) using the following procedure: (i) Subtract the emissions you can document that should be reasonably allocated to other facilities from the total support emissions calculated under paragraph (d)(3) of this section for that MSC; or (ii) If it is not practicable to use the method in paragraph (d)(5)(i) of this section, divide the total support emissions calculated under paragraph (d)(3) of this section by the lowest number of facilities that the MSC will service on a typical trip; or (iii) Where it is not practicable to use either paragraph (d)(5)(i) or (ii) of this section, calculate the greater of: (A) The emissions that would be generated by the MSC traveling round-trip between the port or home base and the facility; or (B) The emissions generated by the MSC for the entire time it will operate within 25 statute miles of the facility.
	550.205(d)(6)	Calculate the sum of the emissions estimates that result from the calculation in paragraph (d)(4) or (5) of this section for every MSC identified in paragraph (d)(1) of this section. That sum represents the attributed emissions for your facility.	See comments to § 550.205(d) above regarding MSCs.	Calculate the sum of the emissions estimates that result from the calculation in paragraph (d)(4) or (5) of this section for every MSC identified in paragraph (d)(1) of this section. That sum represents the attributed emissions for your facility.
	550.205(d)(7)	All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions for each of the relevant sources on every MSC.	See comments to § 550.205(d) above regarding MSCs.	All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions for each of the relevant sources on every MSC.
	550.205(d)(8)	If BOEM questions your determination of the attributed emissions, the Regional Supervisor may require additional documentation to support your findings and may direct you to make changes, as appropriate.	See comments to § 550.205(d) above regarding MSCs.	If BOEM questions your determination of the attributed emissions, the Regional Supervisor may require additional documentation to support your findings and may direct you to make changes, as appropriate.
	550.205(c)	<i>Projected emissions.</i> For every facility described in your plan, you must identify the maximum projected emissions for each criteria and major precursor air pollutant by calculating the annual rate (for each calendar year), the maximum 12-month rolling sum, and the maximum peak hourly rate for your facility emissions under paragraph (c)(2) of this section and your attributed emissions under paragraph (d)(6) of this section.	See comments to § 550.205(c)(1) below.	Projected emissions. For every facility described in your plan, you must identify the maximum projected emissions for each criteria and major precursor air pollutant by calculating the annual rate (for each calendar year), the maximum annual calendar year 12-month rolling sum, and the maximum peak hourly rate for your facility emissions under paragraph (c)(2) of this section and your attributed emissions under paragraph (d)(6) of this section.

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	550.205(c)(1)	If any of your proposed facilities would be located in such a manner as to potentially constitute proximate activities with a pre-existing facility or a facility that was previously approved but not yet constructed, you must identify any such facility in your plan.	As discussed in Section 4 and 5 of our comments the consolidation of proximate activities is better addressed in § 550.303(j). Additionally, see the requested change to the definition of facility contained in § 550.302(b).	If any of your proposed facilities would be located in such a manner as to potentially constitute proximate activities with a pre-existing facility or a facility that was previously approved but not yet constructed, you must identify any such facility in your plan.
	550.205(c)(2)	If you are required to consolidate air emissions from multiple facilities, in accordance with the provisions of § 550.303(d), you must provide the projected emissions information for each facility and provide the complex total emissions for all of the consolidated activities.	See comments to § 550.205(c)(1) above regarding facility consolidation.	If you are required to consolidate air emissions from multiple facilities, in accordance with the provisions of § 550.303(d), you must provide the projected emissions information for each facility and provide the complex total emissions for all of the consolidated activities.
	550.205(f)	Emission reduction measure(s) (ERM). You must provide a description of all proposed ERM, including: the affected emissions source(s); the proposed emissions reduction control technologies, procedures and/or operational limits; the emission control efficiencies; the projected quantity of reductions to be achieved; and any monitoring or monitoring system you propose to use to measure or evaluate the associated emissions. You must be able to demonstrate that all ERM meet the requirements of § 550.309.	The language in this section is duplicative of other sections (§ 550.306, 550.307, and 550.309.) In an effort to stream line the regulatory language, it is requested that this language be changed to reference the relevant sections of the rule.	Emission reduction measure(s) (ERM). You must provide a description of all proposed ERM and associated information required in § 550.306, 550.307, and 550.309, including: the affected emissions source(s); the proposed emissions reduction control technologies, procedures and/or operational limits; the emission control efficiencies; the projected quantity of reductions to be achieved; and any monitoring or monitoring system you propose to use to measure or evaluate the associated emissions. You must be able to demonstrate that all ERM meet the requirements of § 550.309.
	550.205(g)	Modeling information. If you are required to conduct any air quality modeling in support of your plan, then you must provide: (1) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any area(s) of any State(s), including the most affected attainment area(s) and the most affected non-attainment area(s); (2) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any Class I area(s), if relevant; (3) The maximum projected concentrations resulting from the projected emissions for each of your facilities, for each criteria air pollutant and major precursor air pollutant, for the corresponding averaging time(s) (e.g., 1-hour, 3-hour, 8-hour, 24-hour, annual, etc.) specified in the tables in 40 CFR 51.165(b)(2), 40 CFR 52.21(c), and 40 CFR part 50; (4) A list of all inputs, assumptions, and default values used for modeling and justification for each, including the source and justification for the proposed meteorological information; (5) The name and version of the model(s), and whether the model is listed on the USEPA preferred list of models in 40 CFR part 51 appendix W; and (6) A modeling report, including the modeling results. If you have previously provided such a report and/or results of the analysis relevant to paragraphs (e) and (g) of this section to the Regional Supervisor, and the projected emissions are the same as or lower than in the previously submitted report(s) or results, you may instead provide a reference to such report and/or results. (7) For each MSC, provide the distance from each facility described in your plan to the closest relevant home port (for MSCs other than offshore vehicles) or home base (for offshore vehicles), consistent with the maps and information you provide under § 550.224(c) or 550.256(b).	As discussed in Section 1.2 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. BOEM does not have the authority to require compliance with Class I increments or AQRV. Therefore, we request that § 550.205(g)(2) be removed. Furthermore, as discussed previously and in Section 1.2.4 of our comments document, BOEM does not have authority to regulate MSCs. As such, we request that this provision be removed from the proposed regulation.	Modeling information. If you are required to conduct any air quality modeling in support of your plan, then you must provide: (1) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any coastal area(s) of any State(s), including the most affected attainment area(s) with the greatest modeling predicted concentrations and the most affected non-attainment area(s) with the greatest modeling predicted concentrations; (2) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any Class I area(s), if relevant; (3) The maximum projected concentrations resulting from the projected emissions for each of your facilities, for each criteria air pollutant and major precursor air pollutant above the EET, for the corresponding averaging time(s) (e.g., 1-hour, 3-hour, 8-hour, 24-hour, annual, etc.) specified in the tables in 40 CFR 51.165(b)(2), 40 CFR 52.21(c), and 40 CFR part 50; (4) A list of all inputs, assumptions, and default values used for modeling and justification for each, including the source and justification for the proposed meteorological information; (5) The name and version of the model(s), and whether the model is referenced in 550.304(a)(1) listed on the USEPA preferred list of models in 40 CFR part 51 appendix W; and (6) A modeling report, including the modeling results. If you have previously provided such a report and/or results of the analysis relevant to paragraphs (e) and (g) of this section to the Regional Supervisor, and the projected emissions are the same as or lower than in the previously submitted report(s) or results, you may instead provide a reference to such report and/or results. (7) For each MSC, provide the distance from each facility described in your plan to the closest relevant home port (for MSCs other than offshore vehicles) or home base (for offshore vehicles), consistent with the maps and information you provide under § 550.224(c) or 550.256(b).
	550.205(h)	Requirements applicable to specific air pollutants	No comments regarding this paragraph.	N/A
	550.205(h)(1)	Nitrogen and Sulphur Oxides (NOx and SOx). Various documents cross-referenced by these regulations, refer to NOx and NO2 (nitrogen dioxide) or SOx and SO2 (sulphur dioxide). Whenever possible, you must utilize data or reasonable estimates for NOx and SOx. At a minimum, your projected emissions of NOx must include emissions of nitrogen oxide and NO2, and your projected emissions of SOx must include emissions of SO2. In the event that data on NOx or SOx emissions are not available, you must instead utilize data on nitrogen oxide plus NO2 as a substitute for NOx, and SO2 emissions as a substitute SOx.	No comments regarding this paragraph.	N/A

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	550.205(h)(2)	<i>Particulate Matter (PM₁₀ and PM_{2.5})</i> . For each emissions source, you must provide data and information on both PM ₁₀ (PM that is 10 micrometers or less in diameter) and PM _{2.5} (PM that is 2.5 micrometers or less in diameter) whenever such information is available and evaluate each type of particulate matter (PM) separately under every applicable standard. All reporting of PM _{2.5} must include the sum of filterable and condensable PM. In the event that data for PM is not separately available for both PM ₁₀ and PM _{2.5} for any given source, you must utilize the PM ₁₀ data for the PM ₁₀ analysis and the same data for the PM _{2.5} analysis. A plan that does not contain separate emission exemption threshold and modeling analysis for each type of PM will not be considered complete.	BOEM's language that specifically addresses that plans that do not contain separate threshold and modeling analysis for each type of PM is unnecessary. § 550.205(c) requires the estimation of projected emission for each criteria pollutant and both PM ₁₀ and PM _{2.5} are separate criteria pollutants. It is requested that this language is removed.	<i>Particulate Matter (PM₁₀ and PM_{2.5})</i> . For each emissions source, you must provide data and information on both PM ₁₀ (PM that is 10 micrometers or less in diameter) and PM _{2.5} (PM that is 2.5 micrometers or less in diameter) whenever such information is available and evaluate each type of particulate matter (PM) separately under every applicable NAAQS standard. All reporting of PM _{2.5} must include the sum of filterable and condensable PM. In the event that data for PM is not separately available for both PM ₁₀ and PM _{2.5} for any given source, you must utilize the PM ₁₀ data for the PM ₁₀ analysis and the same data for the PM _{2.5} analysis. A plan that does not contain separate emission exemption threshold and modeling analysis for each type of PM will not be considered complete.
	550.205(h)(3)	<i>Hydrogen Sulfide (H₂S)</i> . All emissions of SO ₂ that result from the flaring of hydrogen sulfide must be included in the projected emissions of SO ₂ reported and analyzed as part of your plan, in accordance with the USEPA's Oil and Natural Gas Sector New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews. If your projected emissions of H ₂ S will potentially exceed the USEPA's Significant Emission Rate for H ₂ S, as defined in 40 CFR 51.166(b)(2)(i), you must report the nature and extent of these emissions and their likely impact as part of your plan.	There are multiple issues with the proposed language in this subsection. Firstly, USEPA's NESHAP regulation is not relevant in geographical areas where BOEM has air quality jurisdiction, which as mentioned repeatedly through these comments is wholly focused on NAAQS and not HAPs. We request the removal of any references to USEPA NESHAP requirements and pollutants that are not criteria or precursor air pollutants. BOEM should not require the quantification of H ₂ S emissions as part of a plan submittal. With that said, BSEE regulations for H ₂ S would be the pertinent mechanism to quantify H ₂ S emissions; however, BSEE regulation is rightfully focused on facility personnel protection and not necessarily state air quality impacts. Thirdly, the requirements in § 550.205(b) already address the quantification of criteria pollutant emissions for each emission source. The inclusion of language in this subsection to quantify SO ₂ emissions from flaring is unnecessary. In conclusion, we request that § 550.205(h)(3) be removed in its entirety.	<i>Hydrogen Sulfide (H₂S)</i>. All emissions of SO₂ that result from the flaring of hydrogen sulfide must be included in the projected emissions of SO₂ reported and analyzed as part of your plan, in accordance with the USEPA's Oil and Natural Gas Sector New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews. If your projected emissions of H₂S will potentially exceed the USEPA's Significant Emission Rate for H₂S, as defined in 40 CFR 51.166(b)(2)(i), you must report the nature and extent of these emissions and their likely impact as part of your plan.
	550.205(h)(4)	<i>Methane (CH₄)</i> . Unless specifically directed to the contrary by another regulatory provision, the analysis or reporting of CH ₄ emissions is not required.	Methane (CH ₄) is not a criteria pollutant and it is not a precursor pollutant. As mentioned repeatedly throughout these comments, BOEM's air program should be wholly focused on criteria pollutants. We assert that BOEM's discretion to require inclusion of methane emissions in plan submittals is restricted. We request the removal of this subsection in its entirety.	<i>Methane (CH₄)</i>. Unless specifically directed to the contrary by another regulatory provision, the analysis or reporting of CH₄ emissions is not required.
	550.205(h)(5)	<i>Ozone (O₃)</i> . Generally reporting is not required other than in accordance with the provisions of § 550.304(b), unless another regulatory provision specifically addresses O ₃ .	As there are no other provisions of this regulation that specifically address O ₃ , this language should be deleted.	<i>Ozone (O₃)</i>. Generally reporting is not required other than in accordance with the provisions of § 550.304(b), unless another BOEM regulatory provision specifically addresses O₃.
	550.205(h)(6)	<i>Lead (Pb) or Ammonia (NH₃)</i> . Reporting of emissions for these pollutants, for any given source, is required: if there are published manufacturer specifications of emissions factors for these pollutants, or if such information is available from the USEPA or could be obtained or derived from another recognized source, such as utilizing a mass balance approach. If you intend to use a source known to emit a potentially significant amount of Pb or NH ₃ , then you must obtain a reasonable estimate of the associated Pb or NH ₃ emissions. Zero emissions for these pollutants should be assumed in the situation where relevant data are not available and neither you nor BOEM have a reason to anticipate that the emissions could be potentially significant.	There is minimal publicly available information on lead (Pb) or Ammonia (NH ₃) emissions from OCS emission sources. Based on experience with similar sources onshore there is no reason to believe that these emissions from OCS sources are significant. As such, we request that portions of this section be stricken and that zero emissions should be assumed. The proposed language allows BOEM to request this information under the specific situation where the emissions could be potentially significant.	<i>Lead (Pb) or Ammonia (NH₃)</i>. Reporting of emissions for these pollutants, for any given source, is required: if there are published manufacturer specifications of emissions factors for these pollutants; or if such information is available from the USEPA or could be obtained or derived from another recognized source, such as utilizing a mass balance approach. If you intend to use a source known to emit a potentially significant amount of Pb or NH₃, then you must obtain a reasonable estimate of the associated Pb or NH₃ emissions. Zero emissions for these pollutants should be assumed in the situation where relevant data are not available and neither you nor BOEM have a reason to anticipate that the emissions could be potentially significant.
	550.205(i)	<i>Distance calculations</i> — (1) <i>Distance from shore</i> . For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closer of: (i) The nearest mean high water mark of a State, or, on the Pacific coast, the nearest mean higher high water mark; or (ii) The nearest Class I area of any State. (2) <i>Distance from SSB</i> . For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closest point at which the OCS borders any State, at the SSB.	As discussed in Section 1.2.5 of our comments, BOEM does not have the authority to assess emissions impacts at the state seaward boundary. As such, the reference to SSB should be deleted. If BOEM insists on assessing impacts at the SSB, BOEM should publish a table that includes these distances, similar to the current practice for distance to shore. This will ensure that operators and BOEM are considering the same basis for distance. BOEM regulates air quality emissions from oil and gas activity on areas of the OCS in federal waters of the Western and Central Gulf of Mexico and the Arctic. Because BOEM does not have jurisdiction over OCS air emissions in the Pacific coast it is requested that the reference to the Pacific coast be deleted from this provision. Finally, as discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. BOEM does not have the authority to require compliance with Class I increments or AQRV.	<i>Distance calculations</i>— (1) <i>Distance from shore</i>. For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closer of: (i) The nearest mean high water mark of a State, or, on the Pacific coast, the nearest mean higher high water mark; or (ii) The nearest Class I area of any State. (2) <i>Distance from SSB</i>. For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closest point at which the OCS borders any State, at the SSB.

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	550.205(j)	<i>Documentation.</i> You must collect, create, and maintain records or any data or information establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate your projected emissions under this section. The emissions factors you propose to use must be documented, and any relevant certifications, citations, methods, and procedures used to obtain or develop emissions factors must be retained. You must collect and maintain all documentation pertaining to the modeling analysis under § 550.205(g), if applicable, including all references and copies of any referenced materials, as well as any data or information related to any ERM that you propose or implement. You must provide this information, unless the Regional Supervisor waives this requirement for good cause.	As discussed in Section 11.5 of our comments, we request that the language in this provision be revised to identify a period of retention of five years or the life of the plan, whichever is shorter, as well as suggests language that provides the opportunity for BOEM to request this information from the operator.	<i>Documentation.</i> You must collect, create, and maintain records of any data or information establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate your projected emissions under this section. The emissions factors you propose to use must be documented, and any relevant certifications, citations, methods, and procedures used to obtain or develop emissions factors must be retained. You must collect and maintain all documentation pertaining to the modeling analysis under § 550.205(g)-if applicable, including all references and copies of any referenced materials; as well as any data or information related to any ERM that you propose or implement. You must retain provide this information-unless the Regional Supervisor waives this requirement-for good cause-for a period of five years or the life of the plan, whichever is shorter, and supply this information to BOEM upon request.
	550.205(k)	<i>Compliance.</i> You must provide a description of how you will comply with § 550.303 when the emissions generated by your proposed plan activities exceed the respective emission exemption thresholds (EETs), calculated using the formulas in § 550.303(c). If you are subject to the requirement to monitor and report your actual emissions in accordance with § 550.311, then the description you provide must describe how you propose to monitor your emissions.	No comments regarding this paragraph.	N/A
	550.205(l)	<i>Reporting.</i> You must submit data and information in a format, and using the forms, as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method authorized by BOEM.	The requested changes are proposed to increase clarity.	<i>Reporting.</i> You must submit data and information in a standard format, and using the forms, as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method as specified-authorized by BOEM.
	550.205(m)	<i>Additional information.</i> (1) If you are required to conduct modeling, and if, under § 550.305 your projected emissions would cause an increase in the concentration of any pollutant that is within 95% of any Significant Impact Level (SIL), then you must: report the amount of emissions from aircraft or onshore support facilities as attributed emissions; and combine the impacts of aircraft and onshore support facilities emissions with the impacts of your projected emissions for the purposes of this section and for your analysis under subpart C of this part. The aircraft and support facilities for which you are required to report emissions are those described in §§ 550.224, 550.225, 550.225, 550.257, and 550.258. If required to report your aircraft or onshore support facilities and those aircraft or onshore support facilities support multiple OCS facilities then you must allocate their emissions in an appropriate manner similar to that described for MSCs in § 550.205(d). (2) The Regional Supervisor may require such additional data or information related to these sources as is necessary to demonstrate your plan's compliance with subpart C of this part, and/or applicable federal laws related to the protection of air quality within BOEM jurisdiction.	As explained in Section 12.5 of our comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations. We request that this entire subsection be eliminated.	<i>Additional information:</i> (1)-If you are required to conduct modeling, and if, under § 550.305 your projected emissions would cause an increase in the concentration of any pollutant that is within 95% of any Significant Impact Level (SIL), then you must: report the amount of emissions from aircraft or onshore support facilities as attributed emissions; and combine the impacts of aircraft and onshore support facilities emissions with the impacts of your projected emissions for the purposes of this section and for your analysis under subpart C of this part-The aircraft and support facilities for which you are required to report emissions are those described in §§ 550.224, 550.225, 550.257, and 550.258. If required to report your aircraft or onshore support facilities and those aircraft or onshore support facilities support multiple OCS facilities then you must allocate their emissions in an appropriate manner similar to that described for MSCs in § 550.205(d); (2)-The Regional Supervisor may require such additional data or information related to these sources as is necessary to demonstrate your plan's compliance with subpart C of this part, and/or applicable federal laws related to the protection of air quality within BOEM jurisdiction.
	550.205(n)	<i>Requirements for plans to be deemed submitted.</i> Your plan will not be deemed submitted in accordance with the requirements of § 550.231 or § 550.266 until: (1) All of the requirements of this section have been completed; (2) You have completed the Ambient Air Increment (AAI) analysis, including the required BOEM forms, the modeling protocol, and the modeling results, as specified in § 550.307(b) if required; and (3) You have completed any other analysis required by subpart C of this part.	This subsection contains language under § 550.205(n)(2) that is unnecessary as it is already captured in § 550.205(n)(3). Therefore, it is requested that § 550.205(n)(2) be deleted from the regulation. Additionally, § 550.205(n)(2) presents a largely unworkable situation that will delay the plan approval process. Specifically, because § 550.304(a)(2) requires an operator to submit the modelling protocol before you conduct modeling, the modeling information required by § 550.205(n) could not be submitted in the initial version of any plan. Such information could only be submitted after BOEM approves the modeling protocol. Therefore, it is requested that BOEM establish a timeline for completing its review. A 15-day limit to review and to approve or deny the protocol should be added to § 550.205(g) or § 550.304(a)(2).	<i>Requirements for plans to be deemed submitted.</i> Your plan will not be deemed submitted in accordance with the requirements of § 550.231 or § 550.266 until: (1) All of the requirements of this section have been completed; (2)-You have completed the Ambient Air Increment (AAI) analysis, including the required BOEM forms, the modeling protocol, and the modeling results, as specified in § 550.307(b) if required; and (3) You have completed any other analysis required by subpart C of this part.
	550.205(o)	<i>Plans exempt from review under the AQRP.</i> If you can demonstrate that your facility will not generate projected emissions of any criteria or precursor air pollutant in an amount greater than the corresponding significant emissions rate limit described in the "Pollutant and Emissions Rate" table defined in 40 CFR 52.211(b)(23)(i), your plan is exempt from the AQRP	As discussed in Section 2.2, the use of onshore stationary source PSD significance thresholds in 40 CFR 52.211(b)(23)(i) are not appropriate for OCS regulations. As such, it is proposed that the regulatory language be updated to reflect the more appropriate EET values.	<i>Plans exempt from review under the AQRP.</i> If you can demonstrate that your facility will not generate projected emissions of any criteria or precursor air pollutant in an amount greater than the corresponding EET significant emissions rate limit described in the "Pollutant and Emissions Rate" table defined in 40 CFR 52.211(b)(23)(i)-your plan is exempt from the AQRP requirements of this section and subpart C of this part.

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		requirements of this section and subpart C of this part.		
What must the EP include?	550.211(c)	<i>Drilling unit.</i> (1) A description of the drilling unit and associated equipment you will use to conduct your proposed exploration activities, including a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels, oil, and lubricants that will be stored on the facility. (2) For purposes of this section, the term "facility" means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations	There is no need to add the definition of facility in this provision since this is already defined in § 550.302(b).	<i>Drilling unit.</i> (1) A description of the drilling unit and associated equipment you will use to conduct your proposed exploration activities, including a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels, oil, and lubricants that will be stored on the facility. (2) For purposes of this section, the term "facility" means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations.
What information must accompany the EP?	550.212(f)	Air emissions information required by § 550.205	No comments regarding this paragraph.	N/A
What hydrogen sulfide (H ₂ S) information must accompany the EP?	550.215(d)	(2) If any H ₂ S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.	As explained in Section 1.2.3 of our comments, BOEM's mandate under OCSLA is to ensure that OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. Since H ₂ S does not have a NAAQS BOEM does not have authority to regulate this pollutant. As such, this text should be removed.	(2) If any H ₂ S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.
	550.215(c)	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of H ₂ S, you must separately identify this activity in your plan and separately identify the resulting emissions of sulphur oxides (SO _x) as part of your projected emissions under § 550.205(e).	See comments to § 550.215(d) above. Furthermore, this subsection is unnecessary. Emissions from flaring will already be accounted for in the information required by § 550.205(b). We request the subsection be eliminated.	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of H ₂ S, you must separately identify this activity in your plan and separately identify the resulting emissions of sulphur oxides (SO _x) as part of your projected emissions under § 550.205(e).
	550.218	Removed	No comments regarding this paragraph.	N/A
What information on support vessels, offshore vehicles, and aircraft you will use must accompany the EP?	550.224(a)	<i>General.</i> A description of the MSCs and aircraft you will use to support your exploration activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to your facility or facilities.	As discussed previously, at the time a plan is submitted operators will know the type of vessel(s) needed for a project but can rarely predict which exact vessels and aircraft will be utilized. As such, we request that the proposed changes be incorporated into this provision to better reflect available information at the time of plan submittal.	<i>General.</i> A description of type(s) (i.e., support vessel, stimulation vessel, construction vessel, etc.) of the MSCs and aircraft you will use to support your exploration activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to your facility or facilities.
	550.224(b)	<i>Air emissions.</i> See § 550.205.	As explained in Section 1.2.5 of our comments, BOEM does not have authority to regulate onshore support facilities, offshore vehicles, and aircraft emissions. Therefore, this provision should be deleted from the regulation.	<i>Air emissions.</i> See § 550.205.
What information on the onshore support facilities you will use must accompany the EP?	550.225(b)	<i>Air emissions.</i> A description of the emissions source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(n), the amount of air pollutants emitted need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted under the CAA or if you can identify another agency to which this emissions information from the facility was submitted.	As explained in Section 1.2.5 of our comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations.	<i>Air emissions.</i> A description of the emissions source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(n), the amount of air pollutants emitted need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted regulated under the CAA or if you can identify another agency to which this emissions information from the facility was submitted.
What must the DPP or DOCD include?	550.241(c)	<i>Drilling unit.</i> A description of the drilling unit and associated equipment you will use to conduct your proposed development drilling activities. Include a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations.	See § 550.211(c) above.	<i>Drilling unit.</i> A description of the drilling unit and associated equipment you will use to conduct your proposed development drilling activities. Include a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations.

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New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.241(d)	<i>Production facilities.</i> A description of the production platforms, satellite structures, subsea wellheads and manifolds, lease term pipelines (see definition at § 550.105), production facilities, umbilicals, and other facilities you will use to conduct your proposed development and production activities. Include a brief description of their important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means a vessel, a structure, or an artificial island used for drilling, well completion, well-workover, or other operations or used to support production facilities.	See § 550.211(c) above.	<i>Production facilities.</i> A description of the production platforms, satellite structures, subsea wellheads and manifolds, lease term pipelines (see definition at § 550.105), production facilities, umbilicals, and other facilities you will use to conduct your proposed development and production activities. Include a brief description of their important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means a vessel, a structure, or an artificial island used for drilling, well completion, well-workover, or other operations or used to support production facilities.
What information must accompany the DPP or DOCD?	550.242(g)	Air emissions information required by § 550.205	No comments regarding this paragraph.	
What hydrogen sulfide (H₂S) information must accompany the DPP or DOCD?	550.245(d)	(3) If any H ₂ S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.	See comments to § 550.215(d) above.	(3) If any H₂S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.
	550.245(e)	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of hydrogen sulfide, you must separately identify this activity in your plan and separately identify the resulting emissions of SO _x , including reporting the sulphur emissions under § 550.205(e).	This subsection is unnecessary. Emissions from flaring will already be accounted for in the information required by 550.205(b). We request this subsection be eliminated.	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of hydrogen sulfide, you must separately identify this activity in your plan and separately identify the resulting emissions of SO_x, including reporting the sulphur emissions under § 550.205(e).
	550.249	Removed	N/A	N/A
What information on the support vessels, offshore vehicles, and aircraft you will use must accompany the DPP or DOCD?	550.257(a)	<i>General.</i> A description of the MSCs and aircraft you will use to support your activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to the facilities you will use to conduct your proposed development and production activities.	See comments on § 550.224(a) above.	<i>General.</i> A description of type(s) (i.e., support vessel, stimulation vessel, construction vessel, etc.) of the MSCs and aircraft you will use to support your activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to the facilities you will use to conduct your proposed development and production activities.
	550.257(b)	<i>Air emissions.</i> See § 550.205.	See comments on § 550.224(b) above.	<i>Air emissions.</i> See § 550.205.
What information on the onshore support facilities you will use must accompany the DPP or DOCD?	550.258(b)	<i>Air emissions.</i> A description of the source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(m), the amount of emissions of air pollutants need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted under the CAA or if you can identify another agency to which emissions from the facility was submitted.	See comments to § 550.225(b) above.	<i>Air emissions.</i> A description of the source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(m), the amount of emissions of air pollutants need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted under the CAA or if you can identify another agency to which emissions from the facility was submitted.

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How must I conduct activities under the approved EP, DPP, DOCD, RUE, pipeline ROW, or lease term pipeline application?	550.280(a)	<i>Compliance.</i> You must conduct all of your lease and unit activities according to your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application, and any approval conditions. You may not install or use any facility, equipment, vessel, vehicle, or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application, and you may not install or use a substitute for any emissions source described in your EP, DPP, DOCD, or RUE, pipeline ROW, lease term pipeline application, without BOEM prior approval. If you fail to comply with your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application:	It should be noted that this language conflicts with other sections of the proposed rule, namely § 550.303(g)(4) and our understanding of BOEM's intent. We suggest language changes that make this section consistent with § 550.303(g)(4) and BOEM current practices. If BOEM were to reject the suggested changes, an operator may be forced to submit a plan with multiple "Operating Scenarios" to ensure that the approved plan includes "all any facility, equipment, vessel, vehicle, or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application." A plan with multiple operating scenarios will prove to be administratively burdensome to BOEM and to the operator.	<i>Compliance.</i> You must conduct all of your lease and unit activities according to your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application, and any approval conditions. You may not install or use any facility, equipment, vessel, vehicle, or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application, and you may not install or use a substitute for any emissions source described in your EP, DPP, DOCD, or RUE, pipeline ROW, lease term pipeline application, without BOEM prior approval if doing so will result in an increase in maximum annual projected emissions, unless the proposed activity is determined to be an insignificant activity. If you fail to comply with your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application:
How will BOEM require revisions to the approved EP, DPP, DOCD or application for a RUE?	550.284(a)	<i>Periodic review.</i> The Regional Supervisor will periodically review the activities you conduct under your approved EP, DPP, DOCD, or RUE application and may require you to submit updated information on your activities. The frequency and extent of this review will be based on the significance of any changes in available information, applicable law or regulation, or onshore or offshore conditions affecting, or affected by, the activities in your approved EP, DPP, DOCD, or RUE application. (1) After 2020, any EP, DPP, DOCD or RUE application that was approved more than ten years prior must be resubmitted for air quality review in accordance with the requirements of § 550.310.	As discussed in Sections 1.2.2 and 10 of our comments, BOEM lacks the authority to require re-submission or revision of an already-approved plan, absent some indication of changed conditions or impacts. Our requested changes to this provision make this regulatory provision consistent with BOEM's authority.	<i>Periodic review.</i> The Regional Supervisor will periodically review the activities you conduct under your approved EP, DPP, DOCD, or RUE application and may require you to submit updated information on your activities. The frequency and extent of this review will be based on the significance of any changes in available information, applicable law or regulation, or onshore or offshore conditions affecting, or affected by, the activities in your approved EP, DPP, DOCD, or RUE application. (1) After 2020, any EP, DPP, DOCD or RUE application that was approved more than ten years prior must be resubmitted for air quality review in accordance with the requirements of § 550.310.
Subpart C – Air Quality Analysis, Control, and Compliance				
Under what circumstances does this subpart apply to operations in my plan?	550.301	The provisions of this subpart apply to any existing facility or proposed plan involving a facility or facilities operating on, or proposed to operate on, any area of the OCS where the Secretary of the Interior has authority to regulate air emissions pursuant to section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. 1334(a)(8), as amended, and jurisdiction pursuant to section 328(b) of the CAA, 42 U.S.C. 7627(b), as amended, including OCS operations conducted pursuant to any plan approved under this part.	See comments in § 550.284(a) regarding BOEM's authority to require re-submission or revision of an already-approved plan.	The provisions of this subpart apply to any existing facility plan deemed submitted after the effective date of the final regulation or proposed plan involving a facility or facilities operating on, or proposed to operate on, any area of the OCS where the Secretary of the Interior has authority to regulate air emissions pursuant to section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. 1334(a)(8), as amended, and retains jurisdiction pursuant to section 328(b) of the CAA, 42 U.S.C. 7627(b), as amended, including OCS operations conducted pursuant to any plan approved under this part.
Acronyms and definitions concerning air quality.	550.302(a)	Acronyms and terms used in this subpart, and in § 550.205, have the following meanings: AAI means ambient air increment(s). AAQSB means ambient air quality standards and benchmarks. AEDT means aviation environmental design tool. APD means application for a permit to drill. AQCR means air quality control region. BACT means best available control technology. BLM means the Bureau of Land Management. Btu IT means British Thermal Unit International Tables. CAA means the Clean Air Act. CEO means Chief Environmental Officer (BOEM) CH4 means methane. CO means carbon monoxide. CP means criteria pollutant. CSU means column-stabilized-units. DOCD means development operations coordination document. DOI means the U.S. Department of the Interior. DPP means development and production plan.	No comments regarding the acronym list.	N/A

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		<p>ECE means emission control efficiency. EET means emission exemption threshold(s). EIS means environmental impact statement. EP means exploration plan. ERM means emission reductions measure(s). FAA means Federal Aviation Administration. FLM means Federal Land Manager, which includes the heads of the U.S. Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), National Park Service (NPS), Bureau of Land Management (BLM) in DOI and U.S. Forest Service in the Department of Agriculture. FPS means floating production systems. FPSO means floating production storage and offloading vessel. G&G means geological and geophysical. GHG means greenhouse gas. hp means horsepower. hpm means mechanical horsepower. HPU means hydraulic power unit. H₂S means hydrogen sulfide.</p>	No comments regarding the acronym list.	N/A
		<p>kW means kilowatt. MARPOL means Marine Pollution Convention. MODU means mobile offshore drilling unit. MOVES means motor vehicle emission simulator. MSC means mobile support craft NAAQS means the primary or secondary national ambient air quality standards. NARA means National Archives and Records Administration. NH₃ means ammonia. NO₂ means nitrogen dioxide. NO_x means nitrogen oxides. O₃ means ozone. OCS means Outer Continental Shelf. OCSLA means Outer Continental Shelf Lands Act. ONRR means the Office of Natural Resources Revenue OSFR means oil spill financial responsibility. OSV means offshore supply vessel.</p>	No comments regarding the acronym list.	N/A
		<p>Pb means lead. PM means particulate matter. PM_{2.5} means fine particulate matter equal to or less than 2.5 micrometers in diameter. PM₁₀ means particulate matter equal to or less than 10 micrometers in diameter. PTE means potential to emit. ROW means rights-of-way. Rpm means revolutions per minute. RUE means right-of-use and easement. SILs means significant impact levels. SO₂ means sulphur dioxide. SO_x means sulphur oxides. SSB means State seaward boundary TAS means treatment as State. TIP means tribal implementation plan. TLP means tension-leg platforms. VOC means volatile organic compound. U.S. means the United States. USEPA means the United States Environmental Protection Agency. µg/m³ means micrograms per cubic meter.</p>	No comments regarding the acronym list.	N/A
	550.302(b)	Terms used in this subpart have the following meanings:	No comments regarding this definition.	N/A

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		N/A	As discussed in Section 9 of our comments, BOEM has not clearly defined when OCS emissions "affect the air quality of any State." In Section 9 of our comments, we identify appropriate definitions.	<u>New Proposed Definition</u> <i>Affect the air quality of any State</i> means the following: (1) The air quality of any State coastal attainment area is considered to be affected by an OCS source when emissions from that source result in a model-predicted onshore concentration that exceeds the SIL and the modelled concentration plus background concentration exceeds the NAAQS. (2) The air quality of any State coastal nonattainment area is considered to be affected by an OCS source when a model-predicted onshore concentration attributable to emissions from the OCS source exceeds a SIL.
		<i>Air quality control region (AQCR)</i> means an interstate area or major intrastate area, which the USEPA deems appropriate for assessing the regional attainment and maintenance of the primary or secondary national ambient air quality standards described in 42 U.S.C. 7409, as provided under 40 CFR part 81, subpart B, Designation of Air Quality Control Regions.	No comments regarding this definition.	N/A
		<i>Ambient Air Increments (AAIs)</i> means the national benchmarks for Ambient Air Increments set out in the table in 40 CFR 52.21(c), as amended, or in 42 U.S.C. 7473 et seq., as amended.	As discussed in Section 2.2 of our comments, BOEM's use of the AAIs is not appropriate for OCS sources. Therefore, we request that this definition be deleted.	<i>Ambient Air Increments (AAIs)</i> means the national benchmarks for Ambient Air Increments set out in the table in 40 CFR 52.21(c), as amended, or in 42 U.S.C. 7473 et seq., as amended.
		<i>Ambient air quality standards and benchmarks (AAQSB)</i> means any or all of the national ambient air quality standards and benchmarks referenced in this subpart, including the primary and secondary NAAQS defined in 40 CFR part 50; the SILs, in 40 CFR 51.165(b)(2); the AAIs, as set out in the table in 40 CFR 52.21(c).	We do not believe a "catch all" phrase such as AAQSB is warranted. As discussed in Section 2.2, it is not appropriate that BOEM's proposed rule address PSD increments (i.e., AAIs). The rule should be precise and refer explicitly to NAAQS and SILs, as appropriate. Therefore, we request that the definition of AAQSB be removed from the definitions.	<i>Ambient air quality standards and benchmarks (AAQSB)</i> means any or all of the national ambient air quality standards and benchmarks referenced in this subpart, including the primary and secondary NAAQS defined in 40 CFR part 50; the SILs, in 40 CFR 51.165(b)(2); the AAIs, as set out in the table in 40 CFR 52.21(c).
		<i>Attainment area</i> means, for any given criteria air pollutant, a geographic area, which is not designated by the USEPA as being a designated non-attainment area, as codified at 40 CFR part 81 subpart C (40 CFR 81.300 through 81.356). This includes areas that are referred to as attainment, maintenance, unclassifiable, or unclassifiable/attainment in that subpart, as well as areas that have not yet been designated because the two-year period to complete such designations after revision of a NAAQS has not yet passed.	No comments regarding this definition.	N/A
		<i>Attributed emissions</i> means, for any given criteria or precursor air pollutant, the emissions from MSC and, if appropriate, aircraft, operating above the OCS or State submerged lands, that are attributed to a facility pursuant to the methodology set forth in § 550.205(d) for the period over which the corresponding facility emissions are measured.	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that this definition be eliminated.	<i>Attributed emissions</i> means, for any given criteria or precursor air pollutant, the emissions from MSC and, if appropriate, aircraft, operating above the OCS or State submerged lands, that are attributed to a facility pursuant to the methodology set forth in § 550.205(d) for the period over which the corresponding facility emissions are measured.
		<i>Background concentration</i> means the ambient air concentration of any given criteria air pollutant that arises both from local natural processes and from the transport into the airshed of natural or anthropogenic pollutants originating locally or from another location, either as measured from an USEPA-approved air monitoring system or as determined on some other appropriate scientifically justified basis approved by BOEM.	We request minor revisions to this definition to allow input from the designated operator in establishing a basis for the background concentration.	<i>Background concentration</i> means the ambient air concentration of any given criteria air pollutant that arises both from local natural processes and from the transport into the airshed of natural or anthropogenic pollutants originating locally or from another location, either as measured from an BOEM or USEPA-approved air monitoring system or as determined on some other appropriate scientifically justified basis proposed by the designated operator in the plan submittal and approved by BOEM.
		<i>Baseline concentration</i> means the ambient background concentration of any given air pollutant that exists or existed at the time of the first application for a USEPA Prevention of Significant Deterioration (PSD) permit in an area subject to section 169 of the CAA, based on air quality data available to the USEPA or a State air pollution control agency and on the monitoring data provided in the permit application and as defined in 40 CFR 51.166(b)(13). The baseline concentration is distinguished from the background concentration in that the background concentration changes continually over time to reflect the current ambient air concentration for any given air pollutant, whereas the baseline concentration remains fixed until such time as a new AAI is established for an attainment area.	This definition is not required because it is relevant only to determining increment (AAI) consumption. As discussed in Section 2.2, it is not appropriate that BOEM's proposed rule address PSD increments (i.e., AAIs).	<i>Baseline concentration</i> means the ambient background concentration of any given air pollutant that exists or existed at the time of the first application for a USEPA Prevention of Significant Deterioration (PSD) permit in an area subject to section 169 of the CAA, based on air quality data available to the USEPA or a State air pollution control agency and on the monitoring data provided in the permit application and as defined in 40 CFR 51.166(b)(13). The baseline concentration is distinguished from the background concentration in that the background concentration changes continually over time to reflect the current ambient air concentration for any given air pollutant, whereas the baseline concentration remains fixed until such time as a new AAI is established for an attainment area.

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		Best Available Control Technology (BACT) means a physical or mechanical system or device that reduces emissions of air pollutants subject to regulation to the maximum extent practicable, taking into account: the amount of emissions reductions necessary to meet specific regulatory provisions; energy, environmental, and economic impacts; and costs.	As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Finally, we request the addition of language ensuring that the review considers safe operations of all OCS facilities as provided in § 550.307(c)(4).	Best Available Control Technology (BACT) means physical or mechanical system or device that reduces emissions of criteria air pollutants subject to regulation to the maximum extent practicable, taking into account: the amount of emissions reductions necessary to meet specific regulatory provisions; energy, environmental, and economic impacts; and costs. If the implementation of BACT under these regulations would compromise the safety of the operation of the facility, and such implementation of any air quality standards or benchmarks cannot be otherwise addressed, then BOEM may waive the requirement to apply BACT.
		Class I area means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, where visibility and air emissions are protected by a FLM pursuant to 42 U.S.C. 7472(a) or 7474, as amended; Class I areas include certain national parks, wilderness areas, national monuments, and areas of special national or regional natural, recreational, scenic, or historic value.	As discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's mandate under OCSLA is to ensure that the OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. BOEM does not have the authority to require compliance with Class I increments or AQRV.	Class I area means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, where visibility and air emissions are protected by a FLM pursuant to 42 U.S.C. 7472(a) or 7474, as amended; Class I areas include certain national parks, wilderness areas, national monuments, and areas of special national or regional natural, recreational, scenic, or historic value.
		Class II area means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, that is protected pursuant to 42 U.S.C. 7472(a) or 7474, as amended, to limits less stringent than those for Class I areas. Sensitive Class II areas represent a sub-classification of Class II areas that are defined by Federal Land Management Agencies as federal lands where the protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or by policy.	As discussed in Section 2.2 of our comments, BOEM's use of the EPA term Class II area is not appropriate for OCS sources. Compliance with the NAAQS is required at all areas onshore. Therefore, we request that this definition be deleted.	Class II area means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, that is protected pursuant to 42 U.S.C. 7472(a) or 7474, as amended, to limits less stringent than those for Class I areas. Sensitive Class II areas represent a sub-classification of Class II areas that are defined by Federal Land Management Agencies as federal lands where the protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or by policy.
		Complex total emissions means the sum of the facility emissions that would result from all of the facilities that have been aggregated for the purposes of evaluating their potential consolidated impact on air quality, pursuant to the methodology set forth in § 550.303(d), and the sum of all corresponding attributed emissions for those facilities.	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the definition of Complex total emissions be deleted.	Complex total emissions means the sum of the facility emissions that would result from all of the facilities that have been aggregated for the purposes of evaluating their potential consolidated impact on air quality, pursuant to the methodology set forth in § 550.303(d), and the sum of all corresponding attributed emissions for those facilities.
		N/A	As discussed in Section 8.9 we are proposing a new definition for the term coastal area of any state.	Newly Proposed Definition Coastal area of any State means the inland area up to 25 miles of the shoreline where the shoreline refers to the nearest mean high water mark of a State. A lesser distance may be acceptable if the modeling analysis demonstrates that maximum concentrations occur closer to the shoreline.
		Criteria air pollutant or criteria pollutant means any one of the principal pollutants for which the USEPA has established and maintains a NAAQS under 40 CFR part 50 in accordance with 42 U.S.C. 7409, as amended, for the protection of public health and welfare, and the environment. The USEPA has established primary standards for the protection of sensitive populations of children and the elderly and secondary standards for the protection of crops, vegetation, buildings, visibility, and prevention of harm to animals. Criteria air pollutants do not include Volatile Organic Compounds (VOCs) or any other precursor air pollutant not already regulated under the NAAQS.	No comments regarding this definition.	N/A
		Design concentration means the pollutant concentration at a given location projected, through computer-simulated air dispersion or photochemical modeling, as described under 40 CFR part 51, appendix W, section 7.2.1.1 to result from your projected emissions, combined with the background concentration for the same pollutant, averaging time, and statistical form at the most appropriate receptor location. The appropriate background concentration is measured from the nearest point at which there is data from a USEPA-approved air monitoring system, or as determined on some other appropriate scientifically justified basis approved by BOEM.	We request that the referenced section in this definition be corrected to section 7.2.1. Furthermore, we request the removal of the background concentration language from this definition because it is already defined in § 550.303(b) and is unnecessary.	Design concentration means the pollutant concentration at a given location projected, through computer-simulated air dispersion or photochemical modeling, as described under 40 CFR part 51, appendix W, section 7.2.1.1 to result from your projected emissions, combined with the background concentration for the same pollutant, averaging time, and statistical form at the most appropriate receptor location. The appropriate background concentration is measured from the nearest point at which there is data from a USEPA-approved air monitoring system, or as determined on some other appropriate scientifically justified basis approved by BOEM.
		Dispersion modeling means the mathematical computer simulation of air emissions being transported from a source through the atmosphere under given meteorological conditions. Emissions from sources, expressed as the rate of air pollutants emitted over time (i.e., pounds per hour), are translated through computer modeling into pollutant concentrations, expressed in units of micrograms of pollutants per cubic meter of ambient air (µg/m ³), or in parts per million or billion, depending on the circumstances. When a file containing meteorological and emissions data are input into the computer model, the model will	No comments regarding this definition.	N/A

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		project the concentrations of the pollutants at a receptor location.		
		<i>Emission control efficiency (ECE)</i> means the effectiveness of an ERM for any given emissions source and air pollutant. The greater the emission control efficiency, the greater the effectiveness of the underlying controls (i.e., measured as a percentage reduction in the underlying emissions of any given pollutant). ECE varies from 100%, representing a control that completely eliminates emissions, to zero, representing a control that has no effect on such emissions.	The proposed regulatory text does not specify the averaging period for determining ECE and it is suggested that an annual averaging period be utilized. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Finally, given the nature of operational limitations and/or equipment replacements, the estimation of an ECE is not practical or useful; therefore, we request that ECEs be used only for sources implementing BACT control requirements.	<i>Emission control efficiency (ECE)</i> means the effectiveness of an ERM, excluding emission credits for any given emissions source and criteria air pollutant. The greater the emission control efficiency, the greater the effectiveness of the underlying controls (i.e., measured as a percentage reduction in the underlying annual emissions of any given pollutant). ECE varies from 100%, representing a control that completely eliminates emissions, to zero, representing a control that has no effect on such emissions.
		<i>Emissions credits</i> mean emissions reductions from an emissions source(s) not associated with the plan that are intended to compensate for the excessive emissions of criteria or precursor air pollutants, regardless of whether these emissions credits are acquired from an emissions source(s) located either offshore or onshore, including: emissions offsets generated by the lessee or operator itself; or emissions offsets acquired from a third party; or trading allowances or other alternative emission reduction method(s) or system(s) associated with a market-based trading mechanism; examples include mitigation banks or other competitive markets where these assets are exchanged.	In concept, this emissions credit provision provides benefit to the OCS operators. However, because BOEM has not established any specific emission credit regulatory requirements and states do not generally have banking systems for areas designated as attainment, the usefulness of the emissions credit program is significantly limited and would be burdensome to implement solely on a case-by-case basis. See Section 7.1 of our comments for additional information.	<i>Emissions credits</i> mean emissions reductions from an emissions source(s) not associated with the plan that are intended to compensate for the excessive emissions of criteria or precursor air pollutants, regardless of whether these emissions credits are acquired from an emissions source(s) located either offshore or onshore, including: emissions offsets generated by the lessee or designated operator itself; or emissions offsets acquired from a third party; or trading allowances or other alternative emission reduction method(s) or system(s) associated with a market-based trading mechanism; examples include mitigation banks or other competitive markets where these assets are exchanged.
		<i>Emission exemption thresholds (EET)</i> means the maximum allowable rate of projected emissions, calculated for each air pollutant, expressed as short tons per year (tpy), above which facilities would be subject to the requirement to perform modeling.	We request minor changes to the definition of EET to improve clarity of the rule requirements. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants	<i>Emission exemption thresholds (EET)</i> means the maximum allowable rate of projected emissions, calculated pursuant to the requirements of § 550.303(c) for each criteria air pollutant, expressed as short tons per year (tpy), above which facilities would be subject to the requirements of § 550.304 to perform modeling.
		<i>Emissions factor(s)</i> means a value that relates the quantity of a specific pollutant released into the atmosphere with the operation of a particular emissions source. Emissions factors are usually expressed as the mass of pollutant generated from each unit (e.g., mass, volume, distance, work, or duration) of activity by the emissions source emitting the pollutant.	No comments regarding this definition.	N/A
		<i>Emission reduction measure(s)</i> (ERM) means any operational control(s), equipment replacement(s), BACT, or emissions credit(s), applied on either a temporary or permanent basis, to reduce the amount of emissions of criteria or precursor air pollutants that would occur in the absence of such measures.	The following change is proposed to clarify that replacement could include the substitution of other equipment in place of the primary emission source.	<i>Emission reduction measure(s)</i> (ERM) means any operational control(s), equipment replacement(s) or substitution(s), BACT, or emissions credit(s), applied on either a temporary or permanent basis, to reduce the amount of emissions of criteria or precursor air pollutants that would occur in the absence of such measures.
		<i>Existing facility</i> means an operational OCS facility described in an approved plan.	No comments regarding this definition.	N/A

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		<p><i>Facility</i> means, any installation, structure, vessel, vehicle, equipment, or device that is temporarily or permanently attached to the seabed of the OCS, including but not limited to a dynamically positioned ship, gravity-based structure, mammade island, or bottom-sitting structure, whether used for the exploration, development, production or transportation of oil, gas, or sulphur. All installations, structures, vessels, vehicles, equipment, or devices directly associated with the construction, installation, and implementation of a facility are part of a facility while located at the same site, attached, or interconnected by one or more bridges or walkways, or while dependent on, or affecting the processes of, the facility, including any ROV attached to the facility. One facility may include multiple derrick rigs, drilling units, vessels, platforms, installations, devices, and pieces of equipment. Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the "tender assist" mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels. Facilities also include all Floating Production Systems (FPS), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.</p>	<p>As discussed in Section 5 of our comments, we request that BOEM incorporated the proposed revisions to the definition of <i>Facility</i>. It is also requested that BOEM incorporate portions of the previous regulatory language contained at § 550.303(j) of BOEM's current regulation. See proposed new language in § 550.303(i) below.</p>	<p><i>Facility</i> means, any installation, structure, vessel, vehicle, equipment, or device that is temporarily or permanently attached to the seabed of the OCS for the purpose of exploring for, developing, or producing oil or gas or sulphur therefrom, and which emits a regulated criteria or precursor pollutant, including but not limited to a dynamically positioned ship, gravity-based structure, mammade island, or bottom-sitting structure, whether used for the exploration, development, production or transportation of oil, gas, or sulphur. All installations, structures, vessels, vehicles equipment, or devices directly associated with the construction, installation, and implementation of a facility are a part of a facility only while located at the same site, attached or interconnected by one or more bridges or walkways or while dependent on or affecting the processes of the facility, including any ROV attached to the facility. One facility may include multiple derrick rigs, drilling units, vessels, platforms, installations, devices, and pieces of equipment. Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the "tender assist" mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels, while temporarily or permanently attached to the seabed and exploring for, developing, or producing oil and gas or sulphur resources. Facilities also include all Floating Production Systems (FPSs), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars, while temporarily or permanently attached to the seabed. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.</p>
		<p><i>Facility emissions</i> means, for any given criteria or precursor air pollutant, the annual, the maximum 12-month rolling sum, and the peak hourly emissions from all emissions sources on or connected to a facility.</p>	<p>See comments to § 550.205(c) whereby we request the removal of 12-month rolling sum.</p>	<p><i>Facility emissions</i> means, for any given criteria or precursor air pollutant, the maximum projected annual, the maximum 12-month rolling sum, and the peak hourly emissions from all emissions sources on or connected to included in a facility.</p>
		<p><i>Federally-recognized Indian tribe</i> refers to a Federally-recognized Indian tribe that has either a Treatment as State (TAS) status recognized by the USEPA or an approved TIP.</p>	<p>As discussed in Section 2.2 of our comments, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed.</p>	<p><i>Federally-recognized Indian tribe</i> refers to a Federally-recognized Indian tribe that has either a Treatment as State (TAS) status recognized by the USEPA or an approved TIP.</p>
		<p><i>Fugitive emissions</i> means the emissions of an air pollutant from an emissions source that do not pass through a stack, chimney, vent, or other functionally-equivalent opening.</p>	<p>No comments regarding this definition.</p>	<p>N/A</p>
		<p><i>Fully reduced</i> means to decrease emissions of VOCs to a rate that will not exceed the emission exemption threshold calculated under § 550.302, or to decrease emissions of criteria air pollutants to a rate that will not exceed the Significant Impact Levels set out in the table in 40 CFR 51.165(b)(2).</p>	<p>We request changes to the definition of <i>Fully reduced</i> to be consistent with changes proposed in other sections of Subpart C.</p>	<p><i>Fully reduced</i> means to decrease emissions of VOCs to a rate that will not exceed the emission exemption threshold calculated under § 550.302, or to decrease emissions of criteria air pollutants to a rate that will not exceed the applicable Significant Impact Levels or NAAQS set out in the table in 40 CFR 51.165(b)(2).</p>
		<p><i>Long-term facility</i> means a facility that has remained or is intended to remain in the same lease block or within one nautical mile of its original location for three years or longer; this three year period is measured from the time the facility is first attached to the seafloor, or another facility, and continues to run until the facility's planned operations cease, regardless of the length of time the facility remains attached to the seafloor in any given year.</p>	<p>As discussed in Section 5 of our comments, we request changes to the definition of <i>Long-term facility</i> to be consistent with our requested changes to definition of <i>Facility</i>.</p>	<p><i>Long-term facility</i> means a "facility" that operates has remained or is intended to remain in the same lease block or within one nautical mile of its original location for three years or longer; this three year period is measured from the time the facility is first attached to the seafloor, or another facility, and continues to run until the facility's planned operations cease, regardless of the length of time the facility remains attached to the seafloor in any given year.</p>
		<p><i>Major precursor pollutant</i> means any precursor pollutant for which the States are required to report actual emissions to the USEPA, as defined in 40 CFR 51.15(a).</p>	<p>We recommend deleting this definition because the proposed rule does not appear to distinguish among major precursor pollutant, precursor air pollutant, and precursor pollutant. See alternative definition for precursor pollutant below.</p>	<p><i>Major precursor pollutant</i> means any precursor pollutant for which the States are required to report actual emissions to the USEPA, as defined in 40 CFR 51.15(a).</p>
		<p><i>MARPOL-certified engine</i> means either: (1) An engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 liters installed on a ship constructed on or after January 1, 1990 but prior to January 1, 2000 that is subject to regulation 13.7 of MARPOL Annex VI; or (2) An engine with a power output of more than 130 kW built on or after January 1, 2000 that is subject to regulations 13.1 through 13.6 of MARPOL Annex VI.</p>	<p>No comments regarding this definition.</p>	<p>N/A</p>

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		<i>Maximum rated capacity</i> means the maximum power an engine is capable of generating over time, expressed in kW, and if necessary, as converted from hp (where 1 hp of power equals 745.699872 Watts or 0.745699872 kW) or from the International Table values of British thermal units (Btu), where 1 Btu/hour of power equals 0.29307107 Watts or 0.00029307107 kW.	No comments regarding this definition.	N/A
		<i>National ambient air quality standards (NAAQS)</i> means the ambient air standards established by the USEPA, as mandated by the CAA (42 U.S.C. 7409), set out in 40 CFR part 50, for the common criteria air pollutants considered harmful to public health or welfare. There are two categories of the NAAQS: primary standards that set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; and secondary standards that set limits to protect public welfare when concentrations are elevated over time, including protection against visibility impairment, prevention of harm to animals, including marine mammals, fish and other wildlife, and avoidance of damage to crops, vegetation, and buildings. This term includes both categories.	We request that this definition be simplified by removing unnecessary language.	<i>National ambient air quality standards (NAAQS)</i> means the ambient air standards established by the USEPA, as mandated by the CAA (42 U.S.C. 7409), set out in 40 CFR part 50.4-13, for the common criteria air pollutants considered harmful to public health or welfare. There are two categories of the NAAQS: primary standards that set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; and secondary standards that set limits to protect public welfare when concentrations are elevated over time, including protection against visibility impairment, prevention of harm to animals, including marine mammals, fish and other wildlife, and avoidance of damage to crops, vegetation, and buildings. This term includes both categories.
		<i>Non-attainment area</i> means, for any given criteria air pollutant, a geographic area, which the Administrator of the USEPA has designated as non-attainment for a NAAQS, as codified at 40 CFR part 81 subpart C. For the purposes of these regulations, all other areas will be considered Attainment areas.	No comments regarding this definition.	N/A
		<i>Operational control</i> means a process, method or technique, other than a physical or mechanical control, or equipment replacement that reduces the emissions of criteria or precursor air pollutants (e.g., limitation on period of operation, load balancing, and/or use of less-polluting fuels).	The following change is proposed to clarify that replacement could include the substitution of other equipment in place of the primary emission source.	<i>Operational control</i> means a process, method or technique, other than a physical or mechanical control, or equipment replacement, or substitution that reduces the emissions of criteria or precursor air pollutants (e.g., limitation on period of operation, load balancing, and/or use of less-polluting fuels).
		<i>Particulate matter (PM)</i> means an airborne contaminant of particulate matter that is regulated as a criteria air pollutant under the ambient air standards. PM ₁₀ refers to airborne contaminants of particulates less than or equal to 10 micrometers. PM _{2.5} or fine PM, is an airborne contaminant composed of particulates less than or equal to a diameter of 2.5 micrometers.	No comments regarding this definition.	N/A
		<i>Plan</i> means any initial, revised, modified, resubmitted, or supplemental Exploration Plan (EP), Development and Production Plan (DPP), Development Operations Coordination Document (DOCD), or application for a Right-of-Use and Easement (RUE), a Pipeline ROW, or a lease term pipeline application.	As discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that this provision be deleted.	<i>Plan</i> means any initial, revised, modified, resubmitted, or supplemental Exploration Plan (EP), Development and Production Plan (DPP), Development Operations Coordination Document (DOCD), or application for a Right-of-Use and Easement (RUE); a Pipeline ROW, or a lease term pipeline application.
		<i>Potential to emit (PTE)</i> means the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, will be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Attributed emissions are not counted in determining a facility's PTE.	We request that this definition be deleted as it is not necessary if <i>projected emissions</i> is used in the regulation.	<i>Potential-to-emit (PTE)</i> means the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, will be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Attributed emissions are not counted in determining a facility's PTE.
		<i>Precursor air pollutant or precursor pollutant</i> means a compound that chemically reacts with other atmospheric gases to form a criteria air pollutant. Some precursor air pollutants are also defined as criteria air pollutants. Precursor air pollutants include VOCs, NO _x , SO _x , and NH ₃ .	We request that BOEM revise the definition to reflect EPA's definition of precursor air pollutant, which is more appropriate for plan reviews.	<i>Precursor air pollutant or precursor pollutant</i> means those compounds defined at 40 CFR 51.166(b)(4)(i) that chemically reacts with other atmospheric gases to form a criteria air pollutant. Some precursor air pollutants are also defined as criteria air pollutants. Precursor air pollutants include VOCs, NO _x , SO _x , and NH ₃ .
		<i>Projected emissions</i> means, for any given criteria or precursor air pollutant, the sum of facility's (or facilities') emissions and the corresponding attributed emissions over the specified time period, with the controlled or uncontrolled nature of the pollutants specified by the context.	See comments to § 550.205(c)(1) that address operator-proposed measures to reduce emissions to more accurately reflect expected emissions for a facility. Also, as explained in Section 12.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that the language related to attributed emissions be eliminated from this definition.	<i>Projected emissions</i> means, for any given criteria or precursor air pollutant, the sum of a facility's (or facilities') emissions and the corresponding attributed emissions over the specified time period, taking into consideration emissions controls, expected utilization, and operational controls with the controlled or uncontrolled nature of the pollutants specified by the context.

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		<i>Proximate activities</i> means activities that involve or affect any of the following: the same well(s); a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, facilities located within one nautical mile of one another. Where a well is drilled from one facility, but production from that well will ultimately take place through a different facility, the drilling and production activities constitute proximate activities if they occur within the same twelve months.	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the definition of <i>proximate activities</i> be deleted.	<i>Proximate activities</i> means activities that involve or affect any of the following: the same well(s); a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, facilities located within one nautical mile of one another. Where a well is drilled from one facility, but production from that well will ultimately take place through a different facility, the drilling and production activities constitute proximate activities if they occur within the same twelve months.
		<i>Sensitive Class II area</i> means a Class II area defined by an FLM agency as being federal land where protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or policy.	As discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. Therefore, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed.	<i>Sensitive Class II area</i> means a Class II area defined by an FLM agency as being federal land where protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or policy.
		<i>Short-term facility</i> means any facility that is not a long-term facility or connected to a long-term facility.	No comments regarding this definition.	N/A
		<i>Significance level or Significant impact level (SIL)</i> means an ambient air benchmark or limit that applies to the ambient air impact of the emissions of a criteria air pollutant, as set out in the table in 40 CFR 51.165(b)(2).	As discussed in Section 9 of our comments, we believe SILs are appropriate for use in nonattainment areas but too stringent for use in attainment areas.	<i>Significance level or Significant impact level (SIL)</i> means an ambient air benchmark or limit that applies to the ambient air impact of the emissions of a criteria air pollutant, as set out in the table in 40 CFR 51.165(b)(2). For those criteria pollutants or averaging periods for which there are no SILs, an interim SIL equal to five percent of the corresponding NAAQS will be in effect until EPA promulgates SILs or BOEM adopts new SILs that are based on air quality studies underway in the Gulf of Mexico and Alaska.
		<i>Technically feasible</i> means a technology or methodology that has been demonstrated to operate successfully on the same type of emissions source as the one under review, or is available and applicable to the type of emissions source under review.	As discussed in Section 7.1.2 of our comments we request that BOEM further clarify how technical feasibility and cost effectiveness will be considered consistent with the requirements of OCSLA 43 U.S.C. § 1347(b).	N/A
		<i>Total support emissions</i> means, for any criteria or precursor air pollutant, the total emissions generated by an MSC that operates in support of your and any other facilities, for the 12-month period over which the corresponding facility emissions are measured. For example, for any given MSC, the total support emissions would equal the number of service trips (i.e., from the port to the supported facilities) made during the relevant 12-month period multiplied by the average number of hours per service trip multiplied by the emissions per hour for all emissions source(s) on that MSC (derived from the emissions factor calculation).	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that this definition be eliminated.	<i>Total support emissions</i> means, for any criteria or precursor air pollutant, the total emissions generated by an MSC that operates in support of your and any other facilities, for the 12-month period over which the corresponding facility emissions are measured. For example, for any given MSC, the total support emissions would equal the number of service trips (i.e., from the port to the supported facilities) made during the relevant 12-month period calendar year multiplied by the average number of hours per service trip multiplied by the emissions per hour for all emissions source(s) on that MSC (derived from the emissions factor calculation).
<i>What analysis of my projected emissions is required under this subpart?</i>	550.303(a)	<i>Establishing emission exemption thresholds.</i> BOEM establishes the rate of projected emissions, calculated for each air pollutant, above which facilities would be subject to the requirement to perform modeling. These EETs establish those rates of emissions below which BOEM has determined emissions would not significantly affect the air quality of any State. If your projected emissions or complex total emissions are exempt, then you will not be required to perform air quality modeling in accordance with the requirements of § 550.304 and to apply any controls, as described in §§ 550.305 through 550.307.	As stated in the Section § 550.303(a) emissions below the EET have been determined not to significantly affect the air quality of any state therefore no additional requirements of Subpart C are warranted to ensure compliance with NAAQS. Specifically, no additional measuring, monitoring or recordkeeping as proposed in Sections § 550.309(d), 311 and 312 should be required. The reporting requirements addressed in the OCS inventory requirements of Section 550.187 are adequate to ensure emissions do not exceed the EET values and thus impact air quality onshore. The proposed alternative language presented addresses this requested change. As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Furthermore, as discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the term <i>complex total</i> be deleted.	<i>Establishing emission exemption thresholds.</i> BOEM establishes the rate of projected emissions, calculated for each criteria air pollutant, above which facilities would be subject to the requirement to perform modeling. These EETs establish those rates of emissions below which BOEM has determined emissions would not significantly affect the air quality of any State. If your projected emissions or complex total emissions are exempt, then you will not be required to perform air quality modeling in accordance with the requirements of § 550.304 and to apply any controls, as described in §§ 550.305 through 550.307.
	550.303(b)	<i>Calculating projected emissions.</i> You must compare your projected emissions, or your complex total emissions if you are required to consolidate multiple facilities under paragraph (d) of this section, with the EETs, pursuant to the following methodology: (1) <i>Projected emissions.</i> You must calculate and report the projected emissions for each facility as set forth in § 550.205(e). (2) <i>Attributed emissions.</i> You must calculate and report all attributed emissions for each facility as set forth in § 550.205(d).	As discussed in Section 4 and 5 of our comments, we request that BOEM remove the inclusion of terms <i>complex total</i> and <i>attributed emissions</i> consistent with the requested changes discussed in the definition of <i>Facility</i> in § 550.302(b) above.	<i>Calculating projected emissions.</i> You must calculate and report the projected emissions for each facility as set forth in § 550.205(c) and compare your projected emissions, or your complex total emissions if you are required to consolidate multiple facilities under paragraph (d) of this section, with the EETs, pursuant to the following methodology: (1) <i>Projected emissions.</i> You must calculate and report the projected emissions for each facility as set forth in § 550.205(e). (2) <i>Attributed emissions.</i> You must calculate and report all attributed emissions for each facility as set forth in § 550.205(d).
	550.303(c)	<i>Exempt emissions thresholds.</i> BOEM will establish EETs under this paragraph. These will determine whether your projected emissions or complex total emissions have the potential to significantly affect the air quality of any State.	As discussed in Section 4 and 5 of our comments, we request that BOEM remove the terms <i>complex total emissions</i> .	<i>Exempt emissions thresholds.</i> BOEM will establish EETs under this paragraph. These will determine whether your projected emissions or complex total emissions have the potential to significantly affect the air quality of any State.

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New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.303(c)(1)	BOEM will establish new EETs based on the factors listed in this paragraph and publish them in the <i>Federal Register</i> . BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds an EET, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307, unless scientific evidence and the application of the factors set in paragraph (c)(2) of this section demonstrates otherwise.	Based on review of past modeling analyses, BOEM's own studies, State Implementation Plans (SIPs), and Department of Interior studies it has been determined that OCS facilities have minimal impact on onshore air quality. Therefore, the current EETs are protective of on shore air quality and do not need to be revised. See Section 2.3 of our comments for supporting documentation. Any future changes to the EETs must be based on the ongoing studies as discussed in Section 6.1.	BOEM will establish new EETs based on the factors listed in this paragraph and publish them in the <i>Federal Register</i>. BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds an EET, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307, unless scientific evidence and the application of the factors set in paragraph (c)(2) of this section demonstrates otherwise.
	550.303(c)(1)(i)	The first time that BOEM establishes a new set of EETs, BOEM will publish a notice in the <i>Federal Register</i> describing the proposed EETs and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EETs. BOEM will publish a subsequent notice in the <i>Federal Register</i> listing the new EETs, along with a corresponding effective date for the new EETs.	Proposed regulatory language regarding BOEM's first and subsequent revisions has been streamlined because the procedures specified in § 550.303(c)(1)(i) and (ii) are identical. Furthermore, as discussed in Section 1.5.5 of our comments we request that future EETs go through the full rule making process and not just a public notice in <i>Federal Register</i> .	4th-4th Each time that BOEM establishes a new set of EET(s), BOEM will publish a proposed rule publish a notice in the <i>Federal Register</i> describing the proposed EETs and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EETs. BOEM will publish a subsequent final rule notice in the <i>Federal Register</i> listing the new EETs, along with a corresponding effective date for the new EETs.
	550.303(c)(1)(ii)	Any time that BOEM determines that a revised EET should be established, BOEM will publish a notice in the <i>Federal Register</i> describing the proposed revised EET and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EET. BOEM will publish a subsequent notice in the <i>Federal Register</i> listing revised EET, along with a corresponding effective date for the revised EET.	See comment on § 550.303(c)(1)(i) above.	Any time that BOEM determines that a revised EET should be established, BOEM will publish a notice in the <i>Federal Register</i> describing the proposed revised EET and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EET. BOEM will publish a subsequent notice in the <i>Federal Register</i> listing revised EET, along with a corresponding effective date for the revised EET.
	550.303(c)(1)(iii)	Until the date of the notice, a facility will not be exempt under this section if its projected emissions of any pollutant exceed EETs as calculated using the following formulas: (A) EET= 3400 x D ^{2/3} for emissions of carbon monoxide (CO); and (B) EET= 33.3 x D for emissions of each of the following: nitrogen oxides (NO _x), SO _x ; volatile organic compounds (VOCs), and PM ₁₀ . Where D is the distance of the facility from the shoreline, as identified in § 550.205(g)(1). (C) For Pb, the EET value is the level defined in 40 CFR 52.21(b)(2)(3)(i).	As stated above to comments on § 550.303(c)(1) the current EETs are protective of air quality levels on shore and thus do not require revision. As discussed in sections 2.4 and 6.1, BOEM should not finalize emissions exemption threshold ranges prior to completing its scientific studies. Furthermore, as discussed in Section 6.3, EETs must account for distance to the onshore area of a State	Until the date of the notice, a facility will not be exempt under this section if its projected emissions of any pollutant exceed EETs as calculated using the following formulas: (A) EET= 3400 x D^{2/3} for emissions of carbon monoxide (CO); and (B) EET= 33.3 x D for emissions of each of the following: nitrogen oxides (NO_x), SO_x; volatile organic compounds (VOCs), PM_{2.5}, and PM₁₀. Where D is the distance of the facility from the shoreline, as identified in § 550.205(g)(1). (C) For Pb, the EET value is the level defined in 40 CFR 52.21(b)(2)(3)(i).
	550.303(c)(1)(iv)	Subsequent to the date of the notice, a facility will not be exempt under this section if its projected emission of any pollutant exceeds an EET published in the notice.	We request this provision be deleted to be consistent with the proposed changes to § 550.303(c)(1)(i).	Subsequent to the effective date of the notice, a facility must re-evaluate and resubmit their plans according to the table 550.303(c)(2) will not be exempt under this section if its projected emission of any pollutant exceeds an EET published in the notice.
	550.303(c)(1)(v)	Because the USEPA's AAQSB are subject to change as scientific knowledge improves and because modeling and evaluation techniques may improve over time, BOEM will revise EETs on an ongoing basis. Thus, as the USEPA revises the NAAQS, or any applicable SIL or AAI, BOEM, at its discretion, will periodically revise its EET formula(s) or its amount(s) for the corresponding air pollutant(s), as appropriate.	Clarification added to the proposed regulatory language to reference the specific provisions that address how BOEM will revise EET values and to remove unnecessary regulatory language. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants.	Because the USEPA's AAQSB are subject to change as scientific knowledge improves and because modeling and evaluation techniques may improve over time, BOEM will revise EETs on an ongoing basis. Thus, as the USEPA revises the NAAQS, or any applicable SIL or AAI, BOEM, at its discretion, will periodically revise its EET formula(s) or its amount(s) for the corresponding criteria air pollutant(s), as appropriate, and publish draft EETs according to 550.303(c)(1)(i).
	550.303(c)(2)	BOEM will determine new EET formulas taking into account the following factors:	No comments regarding this provision.	N/A
	550.303(c)(2)(i)	The absolute level of projected emissions;	No comments regarding this provision.	N/A
	550.303(c)(2)(ii)	The distance of the proposed facility or facilities from any State or from areas critical to natural resources, animals, and habitats;	As discussed in Section 2.2 of our comments, BOEM cannot require plans to address air quality assessments other than NAAQS; therefore, we request the removal of such language from this provision.	The distance of the proposed facility or facilities from any coastal State or from areas critical to natural resources, animals, and habitats;
	550.303(c)(2)(iii)	The existing ambient air pollution in potentially affected States, trend in the ambient air pollution in those States, the associated attainment status of such areas, and the associated effects to public health and welfare;	We request the removal of unnecessary language from this provision.	The existing ambient air pollution in potentially affected coastal States, trend in the ambient air pollution in those States, and the associated attainment status of such areas, and the associated effects to public health and welfare attainment status should address public health and welfare;
	550.303(c)(2)(iv)	Any USEPA AAQSB applied in this part;	We request this provision be updated to reflect the requested revisions to the definitions in § 550.302(b).	Any NAAQS or SIL AAQSB applied in this part;
	550.303(c)(2)(v)	The types, frequency, and duration of any air pollutant emissions and their formation and/or dispersion characteristics;	As noted in other comments, specificity should be added to this paragraph that clarifies that the pollutants subject to this provision are criteria air pollutants.	The types, frequency, and duration of any criteria air pollutant emissions and their formation and/or dispersion characteristics;

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language																																
	550.303(c)(2)(vi)	The characteristics of the facility or facilities and MSCs, including the type and nature of the emissions sources, and the height of the associated points or stacks;	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that the reference to MSCs be deleted.	The characteristics of the facility or facilities and MSCs, including the type and nature of the emissions sources, and the height of the associated points or stacks;																																
	550.303(c)(2)(vii)	Prevailing meteorological characteristics in any given area, including air stability, relevant wind speeds and directions;	No comments on this provision.	N/A																																
	550.303(c)(2)(viii)	The amount of emissions from existing facilities and vessels in the vicinity of the proposed facility; and	It is requested that this provision be deleted as it is unnecessary and identifies items that are already captured under other provisions of § 550.303(c)(2).	The amount of emissions from existing facilities and vessels in the vicinity of the proposed facility; and																																
	550.303(c)(2)(ix)	Other necessary and appropriate considerations.	No comments on this provision.	N/A																																
	550.303(c)(3)	BOEM will set the EET formulas within the following ranges:	Based on review of past modelling analyses, BOEM's own studies, State Implementation Plans (SIPs), and Department of Interior studies it has been determined that OCS facilities have minimal impact on onshore air quality. Therefore, the current EETs are protective of on shore air quality and do not need to be revised. See Section 2.3 of our comments for supporting documentation. Any future changes to the EETs must be based on the ongoing studies as discussed in Section 6.1.	BOEM will set the EET formulas within the following ranges:																																
	550.303(c)(3)(i)	The minimum values in this range are determined by the formulas in table 1 to § 550.303. <table border="1"> <caption>Table 1 to § 550.303</caption> <thead> <tr> <th>Minimum Value Equation</th> <th>Pollutant* and Averaging Period</th> </tr> </thead> <tbody> <tr> <td>$E_{min} = 0.677d^{1.209}$</td> <td>Annual NO_x, SO_x, and PM₁₀</td> </tr> <tr> <td>$E_{min} = 0.203d^{1.209}$</td> <td>Annual PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 3.3815d^{1.209}$</td> <td>24-hr SO₂ and PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 0.812d^{1.209}$</td> <td>24-hr PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 135d^{1.209}$</td> <td>1-hr CO</td> </tr> <tr> <td>$E_{min} = 338.51d^{1.209}$</td> <td>8-hr CO</td> </tr> <tr> <td>$E_{min} = 16.926d^{1.209}$</td> <td>3-hr SO₂</td> </tr> </tbody> </table> <p>*Where <i>d</i> is the distance in statute miles from the State seaward boundary, as reported in your plan under § 50.205(a)(2), and <i>E_{min}</i> equals tons per year. *For PM_{2.5}, the minimum value amount is the level defined in 40 CFR 52.119(a)(2)(ii).</p>	Minimum Value Equation	Pollutant* and Averaging Period	$E_{min} = 0.677d^{1.209}$	Annual NO _x , SO _x , and PM ₁₀	$E_{min} = 0.203d^{1.209}$	Annual PM _{2.5}	$E_{min} = 3.3815d^{1.209}$	24-hr SO ₂ and PM _{2.5}	$E_{min} = 0.812d^{1.209}$	24-hr PM _{2.5}	$E_{min} = 135d^{1.209}$	1-hr CO	$E_{min} = 338.51d^{1.209}$	8-hr CO	$E_{min} = 16.926d^{1.209}$	3-hr SO ₂	See comments to § 550.303(c)(3) above. Furthermore, as documented in Section 6.6 of our comments the minimum EETs proposed in Table 1 contain a material error and utilize an overly conservative Gaussian equation. As discussed previously, there are extensive studies being conducted now that should be considered before establishing any new EET values.	The minimum values in this range are determined by the formulas in table 1 to § 550.303. Delete Table 1 below. <table border="1"> <caption>Table 1 to § 550.303</caption> <thead> <tr> <th>Minimum Value Equation</th> <th>Pollutant* and Averaging Period</th> </tr> </thead> <tbody> <tr> <td>$E_{min} = 0.677d^{1.209}$</td> <td>Annual NO_x, SO_x, and PM₁₀</td> </tr> <tr> <td>$E_{min} = 0.203d^{1.209}$</td> <td>Annual PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 3.3815d^{1.209}$</td> <td>24-hr SO₂ and PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 0.812d^{1.209}$</td> <td>24-hr PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 135d^{1.209}$</td> <td>1-hr CO</td> </tr> <tr> <td>$E_{min} = 338.51d^{1.209}$</td> <td>8-hr CO</td> </tr> <tr> <td>$E_{min} = 16.926d^{1.209}$</td> <td>3-hr SO₂</td> </tr> </tbody> </table> <p>*Where <i>d</i> is the distance in statute miles from the State seaward boundary, as reported in your plan under § 50.205(a)(2), and <i>E_{min}</i> equals tons per year. *For PM_{2.5}, the minimum value amount is the level defined in 40 CFR 52.119(a)(2)(ii).</p>	Minimum Value Equation	Pollutant* and Averaging Period	$E_{min} = 0.677d^{1.209}$	Annual NO _x , SO _x , and PM ₁₀	$E_{min} = 0.203d^{1.209}$	Annual PM _{2.5}	$E_{min} = 3.3815d^{1.209}$	24-hr SO ₂ and PM _{2.5}	$E_{min} = 0.812d^{1.209}$	24-hr PM _{2.5}	$E_{min} = 135d^{1.209}$	1-hr CO	$E_{min} = 338.51d^{1.209}$	8-hr CO	$E_{min} = 16.926d^{1.209}$	3-hr SO ₂
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	550.303(c)(3)(ii)	The maximum values of this range are set by the following formulas: (A) If $d \leq 3$, then $E_{max} = 7072$ for CO; and $E_{max} = 100$ for NO _x , SO _x , VOCs, and PM ₁₀ . (B) If $d > 3$, then $E_{max} = 3400 \times d^{2/3}$ for CO; and $E_{max} = 33.3 \times d$ for NO _x , SO _x , VOCs, and PM ₁₀ . Where <i>d</i> will be the distance of the facility from the SSB as identified in § 550.205(a)(2).	See comments to § 550.303(c)(1) above.	The maximum values of this range are set by the following formulas: (A) If $d \leq 3$, then $E_{max} = 7072$ for CO; and $E_{max} = 100$ for NO _x , SO _x , VOCs, and PM ₁₀ . (B) If $d > 3$, then $E_{max} = 3400 \times d^{2/3}$ for CO; and $E_{max} = 33.3 \times d$ for NO _x , SO _x , VOCs, and PM ₁₀ . Where <i>d</i> will be the distance of the facility from the SSB as identified in § 550.205(a)(2).																																
	550.303(c)(4)	If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds the EETs as determined pursuant to § 550.303, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307.	See comments to § 550.205(c)(1) that address an operator-proposed measure to reduce emissions to more accurately depict projected emissions for a facility.	If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds the EETs as determined pursuant to § 550.303 after applying mitigation, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307.																																
	550.303(d)(1)	Consolidation of air pollutant emissions from multiple facilities. (1) You must report the projected emissions from multiple facilities which may have been or are described in multiple plans, as the complex total emissions for your plan, if:	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that this provision be deleted.	Consolidation of air pollutant emissions from multiple facilities. (1) You must report the projected emissions from multiple facilities which may have been or are described in multiple plans, as the complex total emissions for your plan, if:																																
	550.303(d)(1)(i)	The air pollutant emissions are generated by proximate activities (i.e., the same well(s), a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, by facilities located within one nautical mile of one another); and	See comments to § 550.303(d)(1) above.	The air pollutant emissions are generated by proximate activities (i.e., the same well(s), a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, by facilities located within one nautical mile of one another); and																																
	550.303(d)(1)(ii)	You wholly or partially own, control or operate those facilities; in the event of a dispute as to what constitutes common ownership, control or operations, BOEM will make a determination by reference to the ONRR criteria defined in 30 CFR 1206.101 and 1206.151; and	See comments to § 550.303(d)(1) above.	You wholly or partially own, control or operate those facilities; in the event of a dispute as to what constitutes common ownership, control or operations, BOEM will make a determination by reference to the ONRR criteria defined in 30 CFR 1206.101 and 1206.151; and																																

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.303(d)(1)(iii)	The construction, installation, drilling, operation, or decommissioning of any of your facilities occurs within a contemporaneous 12-month period as the construction, installation, drilling operation, or decommissioning of any other facility; and	See comments to § 550.303(d)(1) above.	The construction, installation, drilling, operation, or decommissioning of any of your or the designated operator's facilities occurs within a calendar year contemporaneous 12-month period as the construction, installation, drilling operation, or decommissioning of any other of the designated operator's facility; and
	550.303(d)(1)(iv)	Such a consolidation of emissions from multiple facilities would generate emissions sufficient to exceed an applicable emission exemption threshold (based on the exemption review described in paragraphs (c) or (d) of this section).	See comments to § 550.303(d)(1) above.	Such a consolidation of emissions from multiple facilities would generate emissions sufficient to exceed an applicable emission exemption threshold (based on the exemption review described in paragraphs (c) or (d) of this section).
	550.303(d)(2)	If any two or more facilities meet all of the conditions specified in (d)(1)(i) through (iii) of this section, you must calculate the sum of the projected emissions from those facilities (including their respective attributed emissions) as the complex total emissions for your plan.	See comments to § 550.303(d)(1) above.	If any two or more facilities meet all of the conditions specified in (d)(1)(i) through (iii) of this section, you must calculate the sum of the projected emissions from those facilities (including their respective attributed emissions) as the complex total emissions for your plan.
	550.303(d)(3)	BOEM will make a determination that you have appropriately considered the relevant data in your analysis of the complex total emissions.	See comments to § 550.303(d)(1) above.	BOEM will make a determination that you have appropriately considered the relevant data in your analysis of the complex total emissions.
	550.303(d)(4)	If you are required to consolidate projected emissions data from multiple facilities, then anywhere a requirement applies to projected emissions you must instead use complex total emissions, except with respect to the process by which projected emissions are determined for any given facility (as specified in § 550.205(d)).	See comments to § 550.303(d)(1) above.	If you are required to consolidate projected emissions data from multiple facilities, then anywhere a requirement applies to projected emissions you must instead use complex total emissions, except with respect to the process by which projected emissions are determined for any given facility (as specified in § 550.205(d)).
	550.303(e)	Emissions do not exceed any threshold. If none of your projected emissions or complex total emissions of any precursor or criteria air pollutant exceeds the applicable emission exemption threshold, then your projected emissions are <i>de minimis</i>, and no further analysis is required under this subpart.	Revisions to the proposed regulatory text were added to clarify that a facility is exempt from all provisions of Subpart C if projected emissions are below all EET values. Also, see comments to § 550.303(d)(1) above regarding the deletion of the term complex total emissions from this provision.	Emissions do not exceed any threshold. If none of your projected emissions or complex total emissions of any precursor or criteria air pollutant exceeds the applicable emission exemption threshold, then your projected emissions are <i>de minimis</i>, and no further analysis is required under this subpart; you are exempt from additional requirements as prescribed in Subpart C.
	550.303(f)	Emissions exceed a threshold. If your projected emissions or complex total emissions of the precursor or criteria air pollutant exceed the applicable emission exemption threshold, then further review and/or controls are required, in accordance with the provisions below:	See comments to § 550.303(d)(1) above regarding the deletion of the term complex total emissions from this provision.	Emissions exceed a threshold. If your projected emissions or complex total emissions of the precursor or criteria air pollutant exceed the applicable emission exemption threshold, then further review and/or controls are required, in accordance with the provisions below:
	550.303(f)(1)	If the exceedance is for VOCs, you must control your emissions of VOCs in accordance with § 550.306, for a short-term facility, or § 550.307, for a long-term facility.	As discussed in sections 1.2.2 and 9.4 of our comments, BOEM's proposed regulatory requirements for VOC neither consider the significance of the effect of the emissions on the air quality of a state nor endeavor to assess the impact of the emissions on onshore attainment or maintenance of the NAAQS and thus this provision is inconsistent with the mandate of OCSLA section 5(a)(8) and exceed BOEM's authority. BOEM should wait until the completion of the ongoing air emission impact studies to determine appropriate actions for VOCs.	If the exceedance is for VOCs, you must control your emissions of VOCs in accordance with § 550.306, for a short-term facility, or § 550.307, for a long-term facility.
	550.303(f)(2)	If the exceedance is for any criteria air pollutant, then you must conduct modeling in accordance with § 550.304.	No comments regarding this paragraph.	N/A
	550.303(f)(3)	If the exceedance is for NO _x , VOCs, or CO, and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for O ₃ .	Expensive and complex photochemical modeling is not warranted given the minimal impact of OCS facilities on onshore air quality. See additional discussions as provided in Section 8.2 of our comments.	If the exceedance is for NO_x, VOCs, or CO, and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for O₃.
	550.303(f)(4)	If the exceedance is for NO _x , VOCs, PM _{2.5} , or SO _x , and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for PM _{2.5} .	See response above response to § 550.303(f)(3).	If the exceedance is for NO_x, VOCs, PM_{2.5}, or SO_x, and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for PM_{2.5}.
	550.303(g)(1)	Changes to previously approved plans. (1) If you change your plan implementation, such that your projected emissions, or your complex total emissions, will occur in years other than those that were previously approved, you must submit a revised plan, and that revised plan must be approved before you implement the proposed changes.	It is requested that this provision be revised to be consistent with the proposed changes in § 550.205(c)(2) and to remove the term <i>complex total emissions</i> as previously discussed.	Changes to previously approved plans. (1) If you change your plan implementation, such that your facility maximum projected emissions, or your complex total emissions, will occur in years other than those that were previously approved, you must submit a revised plan, and that revised plan must be approved before you implement the proposed changes.
	550.303(g)(2)	If at any time you anticipate an increase in the maximum air pollutant emissions from a previously approved plan, you must submit a revised plan, pursuant to 30 CFR 550.283(a)(4).	As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria pollutants and the time period and emission basis for comparison.	If at any time you anticipate an increase in annual facility emissions above in the maximum annual criteria air pollutant emissions from a previously approved plan, you must submit a revised plan, pursuant to 30 CFR 550.283(a)(4).
	550.303(g)(3)	If you propose to make a change to your operations on your existing facility or facilities, but not in the equipment used in such operations, and your approved projected annual emissions in any given year are higher than those previously approved for the particular year, but lower than the maximum air pollutant emissions for any year, you do not need to submit a revised plan -- as long as the operations would occur in the same year as	This subsection is repetitive with the requirement in § 550.280(a). It is suggested that this text be eliminated and the text in § 550.280(a) be revised based on the suggested language changes.	If you propose to make a change to your operations on your existing facility or facilities, but not in the equipment used in such operations, and your approved projected annual emissions in any given year are higher than those previously approved for the particular year, but lower than the maximum air pollutant emissions for any year, you do not need to submit a revised plan -- as long as the operations would occur in the same year as described in the previous plan.

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New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
		described in the previous plan.		
	550.303(g)(4)	If you propose to make a change to the equipment on your existing facility or facilities in a year or years where your plan already anticipated operations, and your proposed change would result in an increase in air pollutant emissions from that equipment for any air pollutant, you must submit a revised plan.	This subsection is repetitive with the requirement in § 550.280(a). It is suggested that this text be eliminated and the text in § 550.280(a) be revised based on the suggested language changes.	If you propose to make a change to the equipment on your existing facility or facilities in a year or years where your plan already anticipated operations and your proposed change would result in an increase in air pollutant emissions from that equipment for any air pollutant, you must submit a revised plan.
	550.303(g)(5)	If your plan was approved for a short-term facility that becomes a long-term facility, then you must submit a revised plan for review and approval by BOEM.	BOEM needs to clarify that a short-term facility can continue to operate while awaiting BOEM approval of its revised plan to become a long-term facility.	N/A
	550.303(h)	<i>Federal land manager.</i> If BOEM believes that your proposed activities may affect a Class I or a Sensitive Class II area of a State:	As discussed in Section 1.2.7 of our comments, OCLSA did not grant FLMs any authority over OCS emissions, and it did not authorize BOEM to use its section 5(a)(8) authority as a means of protecting AQRVs that are of concern to FLMs. Therefore, we request that this provision be removed.	<i>Federal land manager.</i> If BOEM believes modeling and Q-D analysis indicates that your proposed activities may affect NAAQS in a Class I or a Sensitive Class II area of a State:
	550.303(h)(1)	BOEM may consult with one or more relevant FLMs to determine what effects could result from your proposed activities.	See comments to § 550.303(h) above.	N/A
	550.303(h)(2)	BOEM will consider the views of the FLMs in determining whether your plan complies with the provisions of this subpart. Based on this consultation, BOEM may require additional information and analysis, either prior to or as a condition of approving your plan.	See comments to § 550.303(h) above.	BOEM will consider the views of the FLMs in determining whether your plan complies with the provisions of this subpart. Based on this consultation, BOEM may require additional information and analysis, either prior to or as a condition of approving your plan.
	550.303(h)(3)	If the FLM does not raise any concerns regarding your plan in a timely manner, BOEM will assume that the FLM has no objections to the proposed plan.	See comments to § 550.303(h) above.	If the FLM does not raise any concerns regarding your plan in a timely manner 15 days, BOEM will assume that the FLM has no objections to the proposed plan.
	550.303(i) Current Regulation under § 550.303(j)	<i>Review of facilities with emissions below the exemption amount.</i> If, during the review of a new, modified, or revised Exploration Plan or Development and Production Plan, the Regional Supervisor determines or an affected State submits information to the Regional Supervisor which demonstrates, in the judgment of the regional supervisor, that projected emissions from an otherwise exempt facility will, either individually or in combination with other facilities in the area, significantly affect the air quality of an onshore area, then the Regional Supervisor shall require the lessee to submit additional information to determine whether emission control measures are necessary. The lessee shall be given the opportunity to present information to the Regional Supervisor which demonstrates that the exempt facility is not significantly affecting the air quality of an onshore area of the State.	See comments to definition of Facility in § 550.302(b) above and Section 5 of our comments.	<i>Review of facilities with emissions below the exemption amount.</i> If, during the review of a new, modified, or revised Exploration Plan or Development and Production Plan, the Regional Supervisor determines or an affected coastal State submits information to the Regional Supervisor which demonstrates, in the judgment of the regional supervisor, that projected emissions from an otherwise exempt facility will, either individually or in combination with other facilities in the area, significantly affect the air quality of an onshore area, then the Regional Supervisor shall require the lessee to submit additional emissions information to determine whether emission control measures are necessary and appropriate for NAAQS compliance. Additional emissions information requested shall be limited to information relating to facilities for which the lessee is the designated operator and that are within the 500m USCG Safety Zone of the otherwise exempt facility (measured from the center of the equipment on the surface site) that share any of the following production equipment including but not limited to, amine gas sweetening units, phase separators, natural gas dehydrators, or emissions control devices. The lessee also shall be given the opportunity to present information to the Regional Supervisor which demonstrates that the exempt facility is not significantly affecting the air quality of an onshore area of the State for NAAQS compliance.
<i>What must I do if my projected emissions exceed an emission exemption threshold?</i>	550.304	If your projected emissions or your complex total emissions exceed the limits defined in § 550.303(c) for any criteria or precursor pollutant, you must conduct modeling of that pollutant, and any other pollutant for which that pollutant is a precursor, to project the impacts of those emissions.	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the term <i>complex total emissions</i> be deleted.	If your projected emissions or your complex total emissions exceed the applicable EETs limits defined in § 550.303(c)(1)(ii) for any criteria or precursor pollutant after applying operational limitations, you must conduct modeling of that pollutant in accordance with the following paragraphs of this section and any other pollutant for which that pollutant is a precursor; to project the impacts of those emissions.
	550.304(a)(1)	<i>Dispersion models.</i> (1) You must use one or more of the following air dispersion models: (i) A model approved by the USEPA, as described in appendix A to appendix W of 40 CFR part 51 (Summaries of Preferred Air Quality Models); or (ii) A model included in the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Another model approved by the BOEM Chief Environmental Officer (CEO). (iv) The BOEM CEO may disapprove the use of a USEPA-approved or FLM-approved air quality model, if the CEO	Clarification added to allow both the preferred and alternate USEPA approved models. Additionally, the BOEM CEO should not be allowed to override EPA approved models or FLM guidance.	<i>Dispersion models.</i> (1) You must use one or more of the following air dispersion models: (i) A model approved by the USEPA (preferred or alternate), as described in appendix A to appendix W of 40 CFR part 51 (Summaries of Preferred Air Quality Models); or (ii) A model included in the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Another model approved by the BOEM Chief Environmental Officer (CEO). (iv) The BOEM CEO may disapprove the use of a USEPA-approved or FLM-approved air quality model, if the CEO determines that such model would not be appropriate in the CEGS context.

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		determines that such model would not be appropriate in the OCS context.		
	550.304(a)(2)	You must follow the modeling procedures recommended in 40 CFR part 51 appendix W, to the extent possible. You must provide BOEM with a copy of your dispersion modeling protocol and the associated data and assumptions used to do your analysis before you conduct modeling.	See comments to § 550.205(n) above regarding modeling protocol. Furthermore, we request adding clarification that only the portions relevant to offshore sources should be followed.	You must follow the relevant modeling procedures recommended for offshore sources in 40 CFR part 51 appendix W, to the extent possible. You must provide BOEM with a copy of your dispersion modeling protocol and the associated data and assumptions used to do your analysis before you conduct modeling.
	550.304(b)(1)	Photochemical models. Photochemical modeling is required only if: (1) Your projected emissions (or your complex total emissions where applicable) for the relevant precursor air pollutants exceed an applicable FEEI;	Expensive and complex photochemical modelling is not warranted given the minimal impact of OCS facilities on onshore air quality. See additional discussions as provided in Section 8.2 of our comments document.	Photochemical models. Photochemical modeling is required only if: (1) Your projected emissions (or your complex total emissions where applicable) for the relevant precursor air pollutants exceed an applicable FEEI;
	550.304(b)(2)	An appropriate photochemical air quality model is available that: (i) Meets the USEPA's requirements of section 3.2 of appendix W to 40 CFR; (ii) Complies with the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Is another model approved by the BOEM CEO;	See response to § 550.304(b)(1) above.	An appropriate photochemical air quality model is available that: (i) Meets the USEPA's requirements of section 3.2 of appendix W to 40 CFR; (ii) Complies with the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Is another model approved by the BOEM CEO;
	550.304(b)(3)	BOEM has determined that adequate relevant information on background concentrations is available for the relevant location(s) in a potentially affected State(s).	See response to § 550.304(b)(1) above.	BOEM has determined that adequate relevant information on background concentrations is available for the relevant location(s) in a potentially affected State(s);
	550.304(b)(4)	Upon request, you must provide BOEM with a copy of your photochemical modeling protocol and the associated data and assumptions used to do your photochemical analysis before you conduct modeling.	See comments to § 550.304(b)(1) and § 550.304(a)(2) above.	Upon request, you must provide BOEM with a copy of your photochemical modeling protocol and the associated data and assumptions used to do your photochemical analysis before you conduct modeling.
	550.304(c)	Projected emissions. Base your modeling on the maximum projected emissions, as reported under § 550.205(c), or on the complex total emissions, where applicable;	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the term <i>complex total emissions</i> be deleted.	<i>Projected emissions.</i> Base your modeling on the maximum projected emissions, as reported under § 550.205(c), or on the complex total emissions, where applicable;
	550.304(d)	Meteorology. Apply the best available and most recent meteorological dataset, either as directed in 40 CFR part 51 appendix W, or by using an alternate dataset approved by the Regional Supervisor.	No comments on this provision.	N/A
	550.304(e)	Estimates of ambient air concentrations. For each criteria air pollutant resulting from your projected emissions (or complex total emissions where applicable), estimate the peak incremental concentrations projected in any attainment area(s) and, separately, in any non-attainment area(s), in any State (over State submerged lands or onshore), both on an annual basis and for the other averaging times specified in the appropriate USEPA regulations at 40 CFR part 50 and the tables at 40 CFR 51.165(b)(2) and 40 CFR 52.21(c).	See comments in § 550.302(b) regarding the removal of the term <i>complex total emissions</i> from this provision. Additionally, see Section 8.9 of our comments and the proposed new definition add in § 550.302(b) regarding the addition of coastal areas to this provision.	<i>Estimates of ambient air concentrations.</i> For each criteria air modelled pollutant resulting from your projected emissions (or complex total emissions where applicable), estimate the peak maximum incremental-plan-related concentrations projected in any coastal attainment area(s) and separately, in any coastal non-attainment areas, in any State where a SIP identifies an OCS contributor (over State submerged lands or onshore), both on an annual basis and for the other averaging times specified in the appropriate USEPA regulations at 40 CFR part 50 and the tables at 40 CFR 51.165(b)(2) and 40 CFR 52.21(c).
	550.304(e)(1)	To the extent practicable, your estimate of the incremental ambient air concentrations of any criteria air pollutant must consider not only the dispersion of each criteria air pollutant itself, but also the formation of any criteria air pollutant that may result from the dispersion or presence of any relevant precursor air pollutant(s). Specifically: (i) Any analysis of PM _{2.5} must include NO _x , SO _x , VOCs, and NH ₃ (ii) Any analysis of O ₃ must include NO _x , VOCs, and CO.	See comments above on the definition of air pollutant contained in § 550.105.	To the extent practicable, your estimate of the incremental ambient air concentrations of any criteria air pollutant must consider not only the dispersion of each criteria air pollutant itself model predictions of PM _{2.5} and ozone must consider both direct emissions and secondary pollutant formation due to, but also the formation of any criteria air pollutant that may result from the dispersion or presence of any emissions of relevant precursor air pollutant(s), where precursor pollutants are defined at 40 CFR 51.166(b)(49)(i). Specifically: (i) Any analysis of PM _{2.5} must include NO _x , SO _x , VOCs, and NH ₃ (ii) Any analysis of O ₃ must include NO _x , VOCs, and CO.
	550.304(e)(2)	BOEM may provide information through a Notice to Lessees to assist Lessees and operators in evaluating existing ambient air concentrations, or changes in such concentrations over time if it determines that there is an effective means of estimating ambient air quality. (i) In the event that BOEM has established appropriate background concentration data, or baseline concentration data, for any given pollutant, at any given location and point in time, you must use the data provided by BOEM. (ii) In the event that BOEM has not established appropriate background concentration data for any given pollutant, for any given location, and point in time, you should use the relevant data from the USEPA for the closest appropriate location, as specified by the Regional Supervisor.	The requested modifications reflect our proposed changes to the definition of <i>background concentration</i> as defined in § 550.302(b) and the removal of the AAI provisions as discussed above. Furthermore, as discussed in Section 1.5.3 of our comments these provisions are vague, nonspecific, and propose to establish via Notice to Lessees methods to demonstrate compliance with ambient air quality without going through the APA rulemaking process.	BOEM may provide information through a Notice to Lessees to assist Lessees and operators in evaluating existing ambient air concentrations, or changes in such concentrations over time if it determines that there is an effective means of estimating ambient air quality. (i) In the event that BOEM has established appropriate background concentration data, or baseline concentration data, for any given pollutant, at any given location and point in time, you must use the data provided by BOEM. (ii) In the event that BOEM has not established appropriate background concentration data for any given pollutant, for any given location, and point in time, you should use the relevant data from the USEPA for the closest appropriate location, or as determined on some other appropriate scientifically justified basis proposed by the designated operator and approved by as specified by the Regional Supervisor.

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	550.304(f)	<i>Attributed emissions.</i> Conduct modeling of attributed emissions from those locations where the emissions are expected to occur (i.e., utilizing a line, area, volume, or pseudo point source model).	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that this provision be deleted.	<i>Attributed emissions.</i> Conduct modeling of attributed emissions from those locations where the emissions are expected to occur outside of the shoreline (i.e., utilizing a line, area, volume, or pseudo-point source model).
	550.304(g)	<i>Documentation and reporting.</i> Create a modeling report documenting all emissions sources, inputs, parameters, assumptions, procedures, methods, and results, including input and output files, and data upon which your analysis under this subpart is based, and provide BOEM with this report, copies of all data and access to any programs used in your modeling.	No comments regarding this paragraph.	N/A
How do I determine whether my projected emissions of criteria air pollutants require ERM?	550.305(a)	For all criteria air pollutants other than PM _{2.5} and O ₃ , compare the results of the modeling described in § 550.304 with the SILs set out in the table at 40 CFR 51.165(b)(2). If the modeling results exceed a SIL for any criteria air pollutant for any averaging time, you are required to apply ERM to sources to reduce emissions only for the CPs that exceed a SIL, as specified in § 550.306 for a short-term facility, or as specified in § 550.307 for a long-term facility.	As discussed in Section 9 of our comments, BOEM has not clearly defined when OCS emissions "affect the air quality of any State." In Section 9, we identify appropriate definitions. The requested changes incorporate our proposed definition of "affect the air quality of any State."	For all criteria air pollutants other than PM _{2.5} and O ₃ , compare the results of the modeling described in § 550.304 with the SILs in coastal nonattainment and attainment areas set out in the table at 40 CFR 51.165(b)(2) . If the modeling results exceed a SIL for any criteria air pollutant for any averaging time in a coastal nonattainment area, you are required to apply ERM to sources to reduce emissions only for the CPs that exceed a SIL, as specified in § 550.306 for a short-term facility, or as specified in § 550.307 for a long-term facility. If the modeling results exceed the SIL in a coastal attainment area you must compare the modeled results plus the appropriate background concentration to the NAAQS. If the modeling results exceed a NAAQS for any criteria air pollutant for any averaging time in a coastal attainment area, you are required to apply ERM to sources to reduce emissions only for the CPs that exceed a NAAQS, as specified in § 550.306 for a short-term facility, or as specified in § 550.307 for a long-term facility.
	550.305(b)	For PM _{2.5} , you must add the results of your dispersion modeling of direct PM _{2.5} emissions conducted under § 550.304(a) to the results of your photochemical modeling, if required under § 550.304(b), before you compare the results with the PM _{2.5} SILs set out in the table at 40 CFR 51.165(b)(2). If this sum exceeds a SIL for PM _{2.5} for any averaging time, you are required to apply ERM for a short-term facility as specified in § 550.306, or as specified in § 550.307, for a long-term facility.	See response to § 550.304(b)(1) above.	For PM_{2.5}, you must add the results of your dispersion modeling of direct PM_{2.5} emissions conducted under § 550.304(a) to the results of your photochemical modeling, if required under § 550.304(b), before you compare the results with the PM_{2.5} SILs set out in the table at 40 CFR 51.165(b)(2). If this sum exceeds a SIL for PM_{2.5} for any averaging time, you are required to apply ERM for a short-term facility as specified in § 550.306, or as specified in § 550.307, for a long-term facility.
	550.305(c)	For O ₃ , you must add the results of your photochemical modeling, if required under § 550.304(b), to the existing background concentrations, as described under § 550.302, and determine if the sum exceeds the NAAQS for O ₃ for any averaging time. If so, for a short-term facility, you must apply ERM as specified in § 550.306, or as specified in § 550.307 for a long-term facility.	See response to § 550.304(b)(1) above.	For O₃, you must add the results of your photochemical modeling, if required under § 550.304(b), to the existing background concentrations, as described under § 550.302, and determine if the sum exceeds the NAAQS for O₃ for any averaging time. If so, for a short-term facility, you must apply ERM as specified in § 550.306, or as specified in § 550.307 for a long-term facility.
What ERM are required for a short-term facility?	550.306(a)	If any short-term facility requires ERM under § 550.303(f) for VOCs or § 550.305 for a CP, then you are required to conduct an ERM analysis to determine potential control options and their likely cost effectiveness. In conducting your ERM analysis, you must:	See comments to § 550.303(f) above.	If any short-term facility requires ERM under § 550.303(f) or § 550.305 for a CP, then you are required to conduct an ERM analysis to determine potential control options and their likely cost effectiveness. In conducting your ERM analysis, you must:
		N/A	We request the following new provisions to improve clarity by separating out operational control or replacement(s) control options from the BACT requirements that may be required by the Regional Supervisor.	550.306(a)(1) - For any given pollutant, you must perform the following analysis: (i) Identify all available operational controls or replacement(s) control options relevant to the emissions of the pollutant(s) for which ERM is required; (ii) Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable operational controls or replacement(s) controls option. (iii) Rank the technically feasible operational controls or replacement(s) controls options by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided (iv) Evaluate the most effective operational control or replacement(s) control options and document the results of your analysis; (v) Select reasonable operational controls or replacement(s) of equipment that are technically and economically feasible and that are designed to limit your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible operational controls or replacement(s) of equipment for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits. (vi) If you can demonstrate to the satisfaction of the Regional Supervisor that no technically feasible operational controls or equipment replacement(s) can be implemented cost effectively, then: (A) For any given pollutant, if your emissions would affect only attainment areas, no ERM will be required with respect to that pollutant beyond that which was proposed in your plan. (B) If your emissions affect any non-attainment area for a specific pollutant, the Regional

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				Supervisor may require the implementation of other ERM for that pollutant in lieu of operational controls or equipment replacement(s) as a condition of approving your plan. For any proposed BACT, you must conduct the ERM analysis in 550.306(a)(2) and provide a description of the associated energy, environmental, and economic impacts, and other costs.
			See comments § 550.306(a)(1) above.	550.306(a)(2) - In conducting your ERM analysis, with BACT, you must: (i) Identify all available ERM including BACT relevant to the emissions of the pollutant(s) for which ERM is required; (ii) Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable emission control technology or methodology. (iii) Rank the technically feasible ERM by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided; and (iv) Evaluate the most effective ERM and document the results of your analysis; and (v) Select the ERM that is technically and economically feasible and reduces your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible ERM for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits.
	550.306(a)(1)	Identify all available control technologies relevant to the emissions of the pollutant(s) for which ERM is required;	See comments § 550.306(a)(1) above.	Identify all available control technologies relevant to the emissions of the CRITERIA pollutant(s) for which ERM is required;
	550.306(a)(2)	Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable emission control technology or methodology.	See comments § 550.306(a)(1) above.	Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable emission control technology or methodology.
	550.306(a)(3)	Rank the technically feasible control technologies by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided;	See comments § 550.306(a)(1) above.	Rank the technically feasible control technologies by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided;
	550.306(a)(4)	Evaluate the most effective ERM and document the results of your analysis; and	See comments § 550.306(a)(1) above.	Evaluate the most effective ERM and document the results of your analysis; and
	550.306(a)(5)	Select reasonable operational controls or replacement(s) of equipment that are technically and economically feasible and that are designed to limit your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible operational controls or replacement(s) of equipment for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits.	See comments § 550.306(a)(1) above.	Select reasonable operational controls or replacement(s) of equipment that are technically and economically feasible and that are designed to limit your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible operational controls or replacement(s) of equipment for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits.
	550.306(a)(6)	If you can demonstrate to the satisfaction of the Regional Supervisor that no technically feasible operational controls or equipment replacement(s) can be implemented cost effectively, then: (i) For any given pollutant, if your emissions would affect only attainment areas, no ERM will be required with respect to that pollutant beyond that which was proposed in your plan. (ii) If your emissions affect any non-attainment area for a specific pollutant, the Regional Supervisor may require the implementation of other ERM for that pollutant in lieu of operational controls or equipment replacement(s) as a condition of approving your plan. For any proposed BACT, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.	See comments § 550.306(a)(1) above.	If you can demonstrate to the satisfaction of the Regional Supervisor that no technically feasible operational controls or equipment replacement(s) can be implemented cost effectively, then: (i) For any given pollutant, if your emissions would affect only attainment areas, no ERM will be required with respect to that pollutant beyond that which was proposed in your plan. (ii) If your emissions affect any non-attainment area for a specific pollutant, the Regional Supervisor may require the implementation of other ERM for that pollutant in lieu of operational controls or equipment replacement(s) as a condition of approving your plan. For any proposed BACT, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.

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	550.306(b)	Unless you demonstrate to the satisfaction of the Regional Supervisor that no technically feasible control technology can be implemented cost effectively, your plan must include:	We request that § 550.306(b) through § 550.306(d) be deleted since all of these determinations should be made as part § 550.306(a)(1) & (2)	Unless you demonstrate to the satisfaction of the Regional Supervisor that no technically feasible control technology can be implemented cost effectively, your plan must include:
	550.306(b)(1)	An evaluation of the ERM you select, quantifying and verifying the emission reduction measure(s) and associated cost(s);	See comments § 550.306(b) above.	An evaluation of the ERM you select, quantifying and verifying the emission reduction measure(s) and associated cost(s);
	550.306(b)(2)	A description of how your selected operational controls or replacement(s) of equipment meet the criteria in § 550.309 for emission reduction measures; and a calculation of your revised projected emissions (or complex total emissions, where applicable), taking into account your selected operational controls or replacement(s) of equipment.	See comments § 550.306(b) above.	A description of how your selected operational controls or replacement(s) of equipment meet the criteria in § 550.309 for emission reduction measures; and a calculation of your revised projected emissions (or complex total emissions, where applicable), taking into account your selected operational controls or replacement(s) of equipment.
	550.306(c)	Upon making a commitment to apply the appropriate operational controls or replacement(s) of equipment or other ERM in lieu of operational controls or replacement(s) of equipment, BOEM may approve your plan, provided all other applicable requirements have been met.	See comments to § 550.306(b) above.	Upon making a commitment to apply the appropriate operational controls or replacement(s) of equipment or other ERM in lieu of operational controls or replacement(s) of equipment, BOEM may approve your plan, provided all other applicable requirements have been met.
	550.306(d)	In the event that BOEM obtains information or data that would indicate that your projected emissions may cause the NAAQS to be exceeded, the Regional Supervisor may require you to provide additional data, analysis, or modeling to demonstrate compliance with the NAAQS or may require that you implement additional ERM so that the NAAQS are not exceeded.	This language is unnecessary as BOEM regulation already includes other opportunities to request additional information and analyses. See provisions of § 550.308(a) below.	In the event that BOEM obtains information or data that would indicate that your projected emissions may cause the NAAQS to be exceeded, the Regional Supervisor may require you to provide additional data, analysis, or modeling to demonstrate compliance with the NAAQS or may require that you implement additional ERM so that the NAAQS are not exceeded.
What ERM are required for a long-term facility?	550.307(a)	<i>Control of emissions of VOCs from a long-term facility.</i> If any long-term facility requires ERM for VOCs under § 550.303(f), you must propose ERM for the facility. The extent of the ERM required depends on the attainment status of the State area affected by your projected emissions.	See comments to § 550.303(f)(1) above.	<i>Control of emissions of VOCs from a long-term facility.</i> If any long-term facility requires ERM for VOCs under § 550.303(f), you must propose ERM for the facility. The extent of the ERM required depends on the attainment status of the State area affected by your projected emissions.
	550.307(a)(1)	Except as provided in paragraph (3), if all the State areas potentially affected by your projected emissions of VOCs are designated as attainment areas for O ₃ and PM _{2.5} , then you must evaluate and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4) and consider all relevant ERM, excluding BACT. You must demonstrate in your plan that the ERM you propose, excluding BACT, will reduce the emissions of VOCs to the lowest practicable and reasonable rate, expressed in tpy. If you elect to propose BACT in lieu of an alternative ERM, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.	See comments to § 550.303(f)(1) above.	Except as provided in paragraph (3), if all the State areas potentially affected by your projected emissions of VOCs are designated as attainment areas for O ₃ and PM _{2.5} , then you must evaluate and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4) and consider all relevant ERM, excluding BACT. You must demonstrate in your plan that the ERM you propose, excluding BACT, will reduce the emissions of VOCs to the lowest practicable and reasonable rate, expressed in tpy. If you elect to propose BACT in lieu of an alternative ERM, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.
	550.307(a)(2)	Except as provided in paragraph (a)(3) of this section, if your projected emissions of VOCs potentially affect a State coastal area designated as a non-attainment area for O ₃ or PM _{2.5} , then you must evaluate BACT and other relevant ERM and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4). You must fully reduce the projected emissions of VOCs to a level not to exceed the EET for VOCs, as calculated for your plan in accordance with § 550.303(e). If your proposed ERM are insufficient to reduce the emissions of VOCs to a level that does not exceed the EET, you must propose and apply additional ERM until such reduction is achieved. For any proposed BACT, you must provide a description of the associated energy, environmental and economic impacts, and other costs.	See comments to § 550.303(f)(1) above.	Except as provided in paragraph (a)(3) of this section, if your projected emissions of VOCs potentially affect a State coastal area designated as a non-attainment area for O ₃ or PM _{2.5} , then you must evaluate BACT and other relevant ERM and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4). You must fully reduce the projected emissions of VOCs to a level not to exceed the EET for VOCs, as calculated for your plan in accordance with § 550.303(e). If your proposed ERM are insufficient to reduce the emissions of VOCs to a level that does not exceed the EET, you must propose and apply additional ERM until such reduction is achieved. For any proposed BACT, you must provide a description of the associated energy, environmental and economic impacts, and other costs.
	550.307(a)(3)	<i>POC waiver:</i> If your projected emissions of VOCs potentially affect a State coastal area but you can demonstrate that your VOCs will not cause an increase, or would cause a reduction, in the formation of O ₃ (i.e., reduce the O ₃ production efficiency), then no ERM are required for those VOCs.	As discussed in Section 8.5 of our comments we support the concept of NOx and VOC waivers. Should BOEM retain NOx and VOC waivers as part of the rule, it would be useful to provide an example of a waiver analysis for an OCS source via an NTL.	N/A
	550.307(b)	<i>Control of emissions of criteria air pollutants from a long-term facility.</i> If a long-term facility requires ERM for criteria air pollutants under § 550.305, then you must propose ERM and conduct modeling as specified below. The objectives of your proposal, and the extent to which additional requirements may apply, depend on the attainment status of the affected State area(s).	Requested clarification added to be consistent with the proposed new coastal areas definition add in § 550.302(b).	<i>Control of emissions of criteria air pollutants from a long-term facility.</i> If a long-term facility requires ERM for criteria air pollutants under § 550.305, then you must propose ERM and conduct modeling as specified below. The objectives of your proposal, and the extent to which additional requirements may apply, depend on the attainment status of the affected State coastal area(s).

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	550.307(b)(1)	If all State areas affected by your emissions are designated as attainment areas, then:	See comments to § 550.307(b) above.	If all State coastal areas affected by your emissions are designated as attainment areas, then:
	550.307(b)(1)(i)	You must consider all relevant ERM excluding BACT, utilizing the process described for a short-term facility in § 550.306(a)(1) through (4).	See comments to § 550.306(a)(1) above.	You must consider all relevant ERM excluding BACT , utilizing the process described for a short-term facility in § 550.306(a)(1)(i) through (v)(4).
	550.307(b)(1)(ii)	You must conduct modeling for all of the air pollutants set out in the table at 40 CFR 52.21(c) using the reduced projected emissions that result from your proposed ERM. If photochemical models are required under § 550.304, then you must also perform photochemical modeling and add the results of those models to the results of the subsequent model results.	See response to § 550.304(b)(1) above. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Finally, it is requested that this requirement be amended to clarify that modeling requirements would only apply to criteria air pollutants that are still above the EET after using the reduced projected emission levels.	You must conduct modeling for all of the criteria air pollutants set out in the table at 40 CFR 52.21(c) 40 CFR part 50, above the EET using the reduced projected emissions that result from your proposed ERM reductions under 550.307(b)(1)(i). If photochemical models are required under § 550.304, then you must also perform photochemical modeling and add the results of those models to the results of the subsequent model results.
	550.307(b)(1)(iii)	You must combine the ambient air concentrations resulting from the projected emissions of each relevant CP with those emissions of the same CP from other onshore and offshore sources which contribute to the consumption of the maximum allowable increases above the baseline concentration for each pollutant and baseline area as established in 40 CFR 52.21. Compare your results with the AAls applicable to the Class area designation of the State area set out in table 40 CFR 52.21(c). (A) For this analysis, use the ambient air quality concentration data specified in § 550.304(c)(2). (B) As an alternative, you may instead model only the increment-related emissions increases and decreases between the baseline date and the modeling date (using emissions inventory data) for all relevant onshore and offshore sources, combined, and then compare the resulting modeled concentration change to the appropriate increment value, without regard to ambient background concentrations.	The requested changes to this provision will ensure consistency with other changes discussed previously.	You must combine the ambient air concentrations resulting from the projected emissions of each relevant CP with appropriate background concentrations for that CP from other onshore and offshore sources which contribute to the consumption of the maximum allowable increases above the baseline concentration for each pollutant and baseline area as established in 40 CFR 52.21. Compare your results with the NAAQSAs applicable to the Class area designation of the State area set out in table 40 CFR 52.21(c) 40 CFR part 50. (A) For this analysis, use the ambient air quality concentration data specified in § 550.304(c)(2). (B) As an alternative, you may instead model only the increment-related emissions increases and decreases between the baseline date and the modeling date (using emissions inventory data) for all relevant onshore and offshore sources, combined, and then compare the resulting modeled concentration change to the appropriate increment value, without regard to ambient background concentrations.
	550.307(b)(1)(iv)	If your projected emissions affect State areas with multiple class area designations, then you must reduce your projected emissions to meet the AAls set out in the table in 40 CFR 52.21(c), according to the requirements for each class area.	See comments to § 550.307(b)(1)(iii) above.	If your projected emissions and background concentration data affect State onshore coastal areas with multiple class area designations, then you must reduce your projected emissions to meet the NAAQSAs set out in the table in 40 CFR 52.21(c) 40 CFR part 50, according to the requirements for each class area.
	550.307(b)(1)(v)	If your proposed ERM are sufficient to reduce projected emissions, such that projected concentrations do not exceed any of the AAls, you must then conduct the analysis described in § 550.307(b)(1)(vi). If your modeling results exceed the AAL for any given air pollutant, then you must continue to apply additional ERM to sources to reduce that pollutant until additional modeling confirms that your projected concentrations do not exceed any AAL. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).	See comments to § 550.307(b)(1)(iii) above.	If your proposed reductions under 550.307(b)(1)(i) ERM are sufficient to reduce projected emissions, such that projected design concentrations do not exceed the relevant CP NAAQS no additional modeling or ERM analyses are required any of the AAls, you must then conduct the analysis described in § 550.307(b)(1)(vi). If your modeling results exceed the NAAQSAs for any given air pollutant, then you must continue to apply additional ERM to sources to reduce that pollutant until additional modeling confirms that your projected concentrations do not exceed any NAAQSAs. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).
	550.307(b)(1)(vi)	You must conduct additional modeling, adding the appropriate background concentrations defined under § 550.302 and specified in § 550.304(c)(2) to your results, in order to determine the relevant design concentrations. You must compare the design concentrations for each criteria air pollutant with the NAAQS set out in 40 CFR part 50. If any of the NAAQS is exceeded for any air pollutant for any period of exposure, then you must propose additional ERM, and repeat the corresponding modeling, until you can demonstrate that your design concentrations do not exceed the NAAQS.	Request to delete unnecessary language as this requirement is addressed in § 550.307(b)(1)(v) above.	You must conduct additional modeling, adding the appropriate background concentrations defined under § 550.302 and specified in § 550.304(c)(2) to your results, in order to determine the relevant design concentrations. You must compare the design concentrations for each criteria air pollutant with the NAAQS set out in 40 CFR part 50. If any of the NAAQS is exceeded for any air pollutant for any period of exposure, then you must propose additional ERM, and repeat the corresponding modeling, until you can demonstrate that your design concentrations do not exceed the NAAQS.
	550.307(b)(2)	If your emissions affect any area designated as a non-attainment area, then you must evaluate BACT and other relevant ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4) and consider all relevant ERM, including BACT. You must reduce the ambient impact of your emissions of all criteria air pollutants to a level that does not exceed the applicable SILs at 40 CFR 51.165(b)(2). You must conduct modeling using your revised projected emissions and compare the results with the SILs. If photochemical modeling is required under § 550.304, then you must also perform additional photochemical modeling and combine the results of that modeling with the results of the subsequent dispersion models. If your results exceed any SIL for any criteria air pollutant for any averaging time, then you must apply additional ERM until additional modeling demonstrates that all projected emissions	The requested changes to this provision will ensure consistency with other changes discussed previously.	If your emissions affect any coastal area designated as a non-attainment area, then you must evaluate BACT and other relevant ERM utilizing the process described for a short-term facility in § 550.306(a)(2)(i) through (v)(4) and consider all relevant ERM, including BACT. You must reduce the ambient impact of your emissions of all criteria air pollutants to a level that does not exceed the applicable SILs at 40 CFR 52.21(c) 40 CFR part 50. You must conduct modeling using your revised projected emissions and compare the results with the SILs. If photochemical modeling is required under § 550.304, then you must also perform additional photochemical modeling and combine the results of that modeling with the results of the subsequent dispersion models. If your results exceed any SIL for any criteria air pollutant for any averaging time, then you must apply additional ERM until additional modeling demonstrates that all projected emissions have been fully reduced so that no SIL is exceeded for any criteria air pollutant over any applicable averaging time. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).

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		have been fully reduced so that no SIL is exceeded for any criteria air pollutant over any applicable averaging time. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).		
	550.307(c)(1)	<i>Exceptions to the ERM requirement:</i> (1) AAs. For any averaging time other than an annual period, a facility's projected emissions may cause an ambient impact that exceeds an applicable AAI one time during any rolling 12-month period for any given criteria air pollutant at any one location and still be considered to have fully reduced emissions.	We request this provision be deleted to be consistent with the removal of AAI provisions as discussed previously.	Exceptions to the ERM requirement: (1) AAs. For any averaging time other than an annual period, a facility's projected emissions may cause an ambient impact that exceeds an applicable AAI one time during any rolling 12-month period for any given criteria air pollutant at any one location and still be considered to have fully reduced emissions.
	550.307(c)(2)	NO _x Waiver: If your projected emissions of NO _x potentially affect a State coastal area, but you can demonstrate that those emissions would not cause an increase, or would cause a reduction, in the formation of O ₃ (i.e., reduce the O ₃ production efficiency), then no ERM are required for NO _x , unless: (i) The potentially affected area is an attainment area for NO _x and your analysis indicates that the AAs for NO _x would be exceeded in the absence of such ERM; or (ii) The potentially affected area is a non-attainment area for NO _x .	As discussed in Section 8.5 of our comments we support the concept of NO _x and VOC waivers. Should BOEM retain NO _x and VOC waivers as part of the rule, it would be useful to provide an example of a waiver analysis for an OCS source.	NO _x Waiver: If your projected emissions of NO _x potentially affect a State onshore coastal area, but you can demonstrate that those emissions would not cause an increase, or would cause a reduction, in the formation of O ₃ (i.e., reduce the O ₃ production efficiency), then no ERM are required for NO _x , unless: (i) The potentially affected area is an attainment area for NO _x and your analysis indicates that the AAs for NO _x would be exceeded in the absence of such ERM; or (ii) The potentially affected area is a non-attainment area for NO _x .
	550.307(c)(3)	VOC Waiver. A VOC's waiver could apply, as described in § 550.307(a)(3).	No comments regarding this paragraph.	N/A
	550.307(c)(4)	Safety exception. If the implementation of a plan under these regulations would compromise the safety of the operation of the facility, and such implementation of any air quality standards or benchmarks cannot be otherwise addressed, then BOEM may waive the requirement to apply ERM.	We support this citation and request that it be included in the definition of ERM to highlight from the start of the analysis.	Safety exception. If the implementation of a plan under these regulations Subpart C would compromise the safety of the operation of the facility, and such implementation of any air quality standards or benchmarks cannot be otherwise addressed, then BOEM may waive the requirement to apply ERM.
	550.307(d)	NAAQs requirement. No concentration of an air pollutant may exceed the concentration permitted under any primary or secondary NAAQS.	As discussed in Section 9.2 of our comments this provision is unreasonable and would essentially require OCS sources to completely offset their emissions if modelled impacts were shown to impact a nonattainment area even if the OCS source's impact is insignificantly small. Therefore, we request that this provision be deleted.	NAAQs requirement. No concentration of an air pollutant may exceed the concentration permitted under any primary or secondary NAAQS.
	550.307(e)	Emissions credits. You may propose to use emissions credits to achieve the equivalent reduction of emissions for any criteria air pollutant as an alternative to any other ERM, regardless of the attainment status of the State area affected by your potential emissions.	In concept, this emissions credit provision provides benefit to the OCS operators. However, because BOEM has not established any specific emission credit regulatory requirements and states do not generally have banking systems for areas designated as attainment, the usefulness of the emissions credit program is significantly limited and would be burdensome to implement solely on a case-by-case basis. See Section 7 of our rule comments for additional information.	<i>Emissions credits.</i> You may propose to use emissions credits to achieve the equivalent reduction of emissions for any criteria air pollutant as an alternative to any other ERM, regardless of the attainment status of the State coastal area affected by your potential emissions.
Under what circumstances will BOEM require additional ERM on my proposed facility or facilities?	550.308(a)	<i>Regional Supervisor review.</i> You may be required to apply additional ERM, on either a temporary or permanent basis, depending on the circumstances, even though you have demonstrated compliance with the sections above, if BOEM determines that your projected emissions or, where applicable, complex total emissions, may cause or contribute to a violation of a NAAQS. The Regional Supervisor may make this determination based on:	As discussed in Section 1.5.1 of our comments, BOEM's inclusion of provision that would allow the Regional Supervisor to simply ignore the entire proposed regulatory scheme, make his or her own NAAQS compliance determination, and impose his or her own emission controls at will, is plainly arbitrary. Therefore, we request that these provisions be deleted.	<i>Regional Supervisor review.</i> You may be required to apply additional ERM, on either a temporary or permanent basis, depending on the circumstances, even though you have demonstrated compliance with the sections above, if BOEM determines that your projected emissions or, where applicable, complex total emissions, may cause or contribute to a violation of a NAAQS. The Regional Supervisor may make this determination based on:
	550.308(a)(1)	Information submitted by a State or local government, or a Federally-recognized Indian tribe;	See comments on § 550.308(a) above.	Information submitted by a State or part of SIP or local government, or a Federally-recognized Indian tribe;
	550.308(a)(2)	A cumulative impacts analysis conducted for an environmental impact statement (EIS) prepared to comply with the National Environmental Policy Act (NEPA);	See comments on § 550.308(a) above.	A cumulative impacts analysis conducted for an environmental impact statement (EIS) prepared to comply with the National Environmental Policy Act (NEPA);
	550.308(a)(3)	A compliance review of your proposed plan under § 550.232(b) for an EP, or § 550.267(c) for a DPP or DOCD; or	See comments on § 550.308(a) above.	A compliance review of your proposed plan under § 550.232(b) for an EP, or § 550.267(c) for a DPP or DOCD; or
	550.308(a)(4)	The declaration by an adjacent State, or the USEPA, of an air quality emergency for a location that may be affected by air emissions generated by your operations.	See comments on § 550.308(a) above.	The declaration by an adjacent State, or the USEPA, of an air quality emergency for a location that may be affected by air emissions generated by your operations.

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	550.308(b)	<i>Lessee's or operator's right to challenge.</i> You will be given notice of the Regional Supervisor's determination, as well as an opportunity to present additional information and analysis for review by the Regional Supervisor. If you present the Regional Supervisor with additional information and analysis, the Regional Supervisor will reassess whether your projected emissions, or complex total emissions, may cause or contribute to a violation of any NAAQS, and whether additional ERM will be required for your facility. The Regional Supervisor will then notify the State or local government, or Federally-recognized Indian tribe, and explain the reasons for this determination.	See comments on § 550.308(a)	Lessee's or operator's right to challenge. You will be given notice of the Regional Supervisor's determination, as well as an opportunity to present additional information and analysis for review by the Regional Supervisor. If you present the Regional Supervisor with additional information and analysis, the Regional Supervisor will reassess whether your projected emissions, or complex total emissions, may cause or contribute to a violation of any NAAQS, and whether additional ERM will be required for your facility. The Regional Supervisor will then notify the State or local government, or Federally-recognized Indian tribe, and explain the reasons for this determination.
What requirements apply to my ERM?	550.309(a)	<i>Sufficiency.</i> Your proposed ERM must be sufficient to achieve actual emissions reductions corresponding to those reported in your plan for the duration of your plan's operations under all reasonably foreseeable conditions. On a case-by-case basis, the Regional Supervisor will review your proposed ERM and make a determination whether such measures meet the applicable criteria.	We request the removal of unnecessary language as these items are already part of the plan review process.	<i>Sufficiency.</i> Your proposed ERM must be sufficient to achieve actual emissions reductions corresponding to those reported in your plan for the duration of your plan's operations under all reasonably foreseeable conditions. On a case-by-case basis, the Regional Supervisor will review your proposed ERM and make a determination whether such measures meet the applicable criteria.
	550.309(b)	<i>Effectiveness.</i> You must continually ensure the effectiveness of your ERM for the duration of your plan's operations. If your measures become disabled or unavailable, you must immediately notify the Regional Supervisor and replace such ERM with others of equal or superior effectiveness within 30 days of discovering the disability or unavailability, unless the Regional Supervisor approves an extension not to exceed 90 days.	The requested changes are proposed to improve clarity of this provision and to recognize that limiting an extension period to 90 days is unreasonable for OCS operations that typically operate in remote and harsh environments. The requirements related to "effectiveness" and "control efficiency" are suitable for emissions sources installed with BACT, but do not apply to operational controls or emissions credits. For example, an operator would not be able to demonstrate the control efficiency of operational fuel limitations. BOEM should revise these requirements to only apply to emissions sources installed with BACT.	<i>Effectiveness.</i> You must continually ensure the effectiveness of your BACT/ERM for the duration of your plan's operations. If your measures become permanently disabled or unavailable, and your emissions exceed your facility's maximum annual projected emissions as approved in your plan you must immediately notify the Regional Supervisor within 5 business days of such event and set forth a schedule for and replacing such BACT/ERM with others of equal or superior effectiveness as soon as practicable within 30 days of after discovering the disability or unavailability, unless the Regional Supervisor approves an extension not to exceed 90 days.
	550.309(c)	<i>Control efficiency.</i> Your proposed ERM must reflect actual ECE. You must substantiate any ECE that you project and provide sufficient evidence to justify your ECE to the satisfaction of the Regional Supervisor.	Substantiating actual emission control efficiency would likely require testing. As discussed in Section 7.1.1 of our comments, BOEM should outline what is required to "substantiate" ECE as part of the rulemaking, allowing operators due process to comment. Furthermore, this provision should be limited to emission sources subject to BACT or operational control limitations. Until this provision is further clarified we request that it be deleted.	Control efficiency. Your proposed ERM must reflect actual ECE. You must substantiate any ECE that you project and provide sufficient evidence to justify your ECE to the satisfaction of the Regional Supervisor.
	550.309(c)(1)	Should your substantiating data indicate a range of ECE, you must utilize the more conservative estimates (i.e., those that would result in lower ECE) in your analysis and modeling.	See comments on § 550.309(c) above.	Should your substantiating data indicate a range of ECE, you must utilize the more conservative estimates (i.e., those that would result in lower ECE) in your analysis and modeling.
	550.309(c)(2)	ECE estimates of 100 percent are generally not acceptable, except in cases where there is clear and convincing and/or historical evidence to justify their use.	See comments on § 550.309(c) above.	ECE estimates of 100 percent are generally not acceptable, except in cases where there is clear and convincing and/or historical evidence to justify their use.
	550.309(d)	<i>Emission reductions monitoring.</i> If ERM are contained in your approved plan, the Regional Supervisor may require that you provide actual emissions data and/or any other information annually that the Regional Supervisor deems necessary to verify the effectiveness of your proposed ERM or their emission control efficiency.	It is requested that this provision be updated to reflect that actual emissions monitoring would only be applicable in instances where control technology was employed as part of BACT requirements. There are already sufficient requirements under the monitoring and recordkeeping portion and GOADS to ensure compliance with operational limits.	<i>Emission reductions monitoring.</i> If ERM BACT are contained in your approved plan, the Regional Supervisor may require that you provide actual emissions data and/or any other information annually that the Regional Supervisor deems necessary to verify the effectiveness of your proposed ERM BACT or their emission control efficiency as a condition of the plan approval.
	550.309(d)(1)	If your plan is approved subject to the application of ERM, you must ensure that the emissions associated with each emissions source for which ERM is required complies with the emissions verification requirements of § 550.311. The Regional Supervisor may require that you install emissions measurement meters if the Regional Supervisor determines that such meters are necessary to ensure compliance with this requirement.	It is requested that this provision be removed because it is duplicative of § 550.311.	If your plan is approved subject to the application of ERM CONTROL TECHNOLOGY, you must ensure that the emissions associated with such emissions source for which ERM CONTROL TECHNOLOGY is required complies with the emissions verification requirements of § 550.311. The Regional Supervisor may require that you install emissions measurement meters if the Regional Supervisor determines that such meters are necessary to ensure compliance with this requirement.
	550.309(d)(2)	If you propose or are required to install emissions meters or any other monitoring equipment, you must collect and maintain monthly logs of the relevant meter or monitoring equipment readings.	See comments on § 550.309(d)(1) above. Furthermore, it is unclear what the term "emissions meters" means as it is not defined in this Subpart.	If you propose or are required to install emissions meters or any other monitoring equipment, you must collect and maintain monthly logs of the relevant meter or monitoring equipment readings.
	550.309(e)	<i>Emissions credits.</i> For emissions credits, the following requirements also apply:	No comments regarding this paragraph.	N/A
	550.309(c)(1)	You must acquire your emissions credits from emissions source(s), either offshore or onshore, that affect the air quality of the same AQCR.	See comments in § 550.307(c) above.	N/A
	550.309(c)(2)	For a CP, the emissions credits that you propose must provide a net air quality benefit for the same pollutant; for a precursor pollutant, any emissions credits that you propose must provide a net air quality benefit for that CP for which the pollutant is a	See comments in § 550.307(c) above.	N/A

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		precursor.		
	550.309(c)(3)	You must demonstrate to the Regional Supervisor that the emissions credit you propose binds you and any other parties who agree to lower their emissions.	See comments in § 550.307(c) above.	N/A
	550.309(c)(4)	You must also demonstrate that any emissions reductions will last for a period of time sufficient to ensure your plan's continued compliance with the provisions of this subpart. The Regional Supervisor may periodically require you to certify that the emissions reductions are still in place.	See comments in § 550.307(c) above.	
	550.309(c)(5)	Any emissions credits must reduce emissions below rates otherwise required by law.	See comments in § 550.307(c) above.	N/A
	550.309(c)(6)	In addition to BOEM, you must notify the appropriate State air quality control jurisdiction of your proposal to acquire emissions offsets and, if necessary, its need to revise the State Implementation Plan to include the information regarding the emissions offsets you have acquired. You must provide evidence of such State notification to BOEM before you commence any operations that rely on the associated emissions credits.	See comments in § 550.307(c) above.	N/A
	550.309(c)(7)	Emissions credits are allowed in those circumstances where BOEM can readily verify the historical emissions from the facility to be used for the emissions credit, and the emissions reduction associated with the acquired emissions credit.	See comments in § 550.307(c) above.	N/A
	550.309(c)(8)	The approval of an emissions credit will be contingent upon receipt of proper documentation and will not be granted if such an emissions credit would require BOEM to engage in ongoing monitoring to verify continued compliance.	See comments in § 550.307(c) above.	N/A
	550.309(c)(9)	Nothing in these regulations is intended to restrict emissions credits from being obtained and shared by multiple lessees or operators.	See comments in § 550.307(c) above.	N/A
	550.309(f)	<i>Emission reduction measure(s) (ERM):</i> Unless otherwise specified, you may employ any operational control, equipment replacement(s), BACT, or emissions credit, on either a temporary or permanent basis, to reduce the amount of emissions that would occur in the absence of such measures. Any proposed ERM will become a condition of your plan upon approval and could be required on either a permanent or temporary basis, depending on the circumstances and location of the proposed facilities.	No comments on this provision.	N/A
	550.309(f)(1)	In the event that you elect or are required to apply equipment replacement on a facility as the selected form of ERM, both the method of replacement and the equipment must comply with all other applicable federal regulations.	It is requested that this unnecessary language be removed. BOEM does not have authority to enforce other applicable federal regulations.	In the event that you elect or are required to apply equipment replacement on a facility as the selected form of ERM, both the method of replacement and the equipment must comply with all other applicable federal regulations.
	550.309(f)(2)	In the event that the equipment being replaced is part of an MSC subject to USCG regulation, such replacement must be implemented in such a manner as to comply with USCG regulations.	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. Furthermore, the owners of MSC's and not the operators are responsible for compliance with USCG. As such, this provision should be removed.	In the event that the equipment being replaced is part of an MSC subject to USCG regulation, such replacement must be implemented in such a manner as to comply with USCG regulations.
How will revisions to the ambient air quality standards and benchmarks (AAQSB) affect my plan?	550.310(a)	<i>Review of plans.</i> BOEM will evaluate the air pollutant emissions data submitted in your plan for compliance with the AAQSBs in effect on the date your plan is deemed submitted.	We request the following changes to increase clarity of this provision and to make the regulatory language consistent with changes previously discussed. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants.	<i>Review of plans.</i> BOEM will evaluate the criteria air pollutant emissions data submitted in your plan in accordance with the processes established in 550.303 and 550.304. for compliance with the NAAQS and SILs that are AAQSBs in effect on the date your plan is deemed submitted will be utilized (if necessary) to determine if ERMs are necessary.
	550.310(b)	<i>Proposed plans.</i> All activities described in initial, revised, modified, and supplemental plans must comply with the AAQSB in effect on the date the plan is deemed submitted, except:	See comments to § 550.310(a).	<i>Proposed plans.</i> All activities described in initial, revised, modified, and supplemental plans must comply with the NAAQS and SILs AAQSB in effect on the date the plan is deemed submitted, except:

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New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language																																																												
	550.310(b)(1)	If your plan was deemed submitted shortly after the effective date of a new or revised AAQSB, and you believe the immediate application of the new or revised AAQSB is impracticable or would otherwise impose an unreasonable hardship on your proposed operations, then you may request a deferral from the requirement to comply with the new or revised standard. The Regional Director will review your request and may with the concurrence of the Director grant a temporary deferral, not to exceed two years, from compliance with the new or revised AAQSB based upon a finding of impracticability or undue hardship.	See comments to § 550.310(a). We support the option for an operator to request a two-year deferral. Planning for new production facilities takes multiple years and unexpected changes to the AAQSB can pose significant schedule risks if the necessary DOCD approvals are delayed.	If your plan was deemed submitted shortly after the effective date of a new or revised NAAQS or SILsAAQSB, and you believe the immediate application of the new or revised NAAQS or SILsAAQSB is impracticable or would otherwise impose an unreasonable hardship on your proposed operations, then you may request a deferral from the requirement to have the air emissions evaluated utilizing the new or revised standard. The Regional Director will review your request and may with the concurrence of the Director grant a temporary deferral, not to exceed two years, from evaluations to the new or revised AAQSB based upon a finding of impracticability or undue hardship.																																																												
	550.310(b)(2)	Upon a finding that noncompliance with a new or revised AAQSB would not significantly affect the air quality of any State, the Director may grant a departure from compliance with the revised AAQSB. The Director may condition the departure upon any requirement(s) deemed necessary to avoid causing or contributing to a violation of the NAAQS.	BOEM has not explained in enough detail how this subsection could be acted upon by the Director. It is unclear how a finding of non-compliance with a new or revised NAAQS would be found to similarly not significantly affect air quality of any state. It is requested that this process be further clarified.	Upon a finding that noncompliance with a new or revised NAAQS/AAQSB would not significantly affect the air quality of any State coastal area, the Director may grant a departure from compliance with the revised NAAQS/AAQSB. The Director may condition the departure upon any requirement(s) deemed necessary to avoid causing or contributing to a violation of the NAAQS.																																																												
	550.310(c)(1)	<i>Approved plans.</i> (1) In order to ensure that your emissions remain compliant with any changes to the NAAQS, you are required to resubmit your plan for a periodic air quality review ten years after BOEM's previous approval of your plan, as further defined in paragraph (c)(2) of this section. A plan resubmitted pursuant to this provision must be updated to comply with the requirements of § 550.205 as they exist at the time of the plan resubmission, including the most current data on emissions factors and MSC emissions, and must be reevaluated against the EETs and formulas as they exist at the time of the plan resubmission. When you resubmit a plan under this provision, that plan must include estimates for the annual projected emissions for the subsequent ten years, or for however long the plan's facility or facilities would be expected to remain in operation, whichever is shorter. With respect to the emissions calculations for any given emissions source, the resubmitted plan must account for the most recent available data on the actual emissions of the relevant emission source. All of the applicable requirements of this subpart in effect on the date of resubmission apply on the same basis to a resubmitted plan as for an initial plan.	As discussed in Sections 1.3.2 and 10 of our comments, the requirement to re-submit plans every 10 years is inconsistent with section 25(b)(3) of OCSLA, which indicates that BOEM can only review an existing plan "based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan." 43 U.S.C. § 1351(b)(3).	<i>Approved plans.</i> (1) In order to ensure that your emissions remain compliant with any changes to the NAAQS, you are required to resubmit your plan for a periodic air quality review ten years after BOEM's previous approval of your plan, as further defined in paragraph (c)(2) of this section. A plan resubmitted pursuant to this provision must be updated to comply with the requirements of § 550.205 as they exist at the time of the plan resubmission, including the most current data on emissions factors and MSC emissions, and must be reevaluated against the EETs and formulas as they exist at the time of the plan resubmission. When you resubmit a plan under this provision, that plan must include estimates for the annual projected emissions for the subsequent ten years, or for however long the plan's facility or facilities would be expected to remain in operation, whichever is shorter. With respect to the emissions calculations for any given emissions source, the resubmitted plan must account for the most recent available data on the actual emissions of the relevant emission source. All of the applicable requirements of this subpart in effect on the date of resubmission apply on the same basis to a resubmitted plan as for an initial plan.																																																												
	550.310(c)(2)	In order to ensure that your emissions remain compliant with OCSLA, starting in 2020, BOEM will conduct periodic reviews of plans approved prior to the effective date of the new exemption thresholds. To accomplish this, from that year forward, you must submit the air quality component of your previously approved plan according to the following schedule, regardless of whether you have a change in emissions. <table border="1"> <thead> <tr> <th>Year the Plan was Approved</th> <th>Year in Which Resubmission is Required</th> </tr> </thead> <tbody> <tr><td>Prior to 1980</td><td>2020</td></tr> <tr><td>1980 through 1984</td><td>2021</td></tr> <tr><td>1985 through 1989</td><td>2022</td></tr> <tr><td>1990 through 1994</td><td>2023</td></tr> <tr><td>1995 through 1999</td><td>2024</td></tr> <tr><td>2000 through 2004</td><td>2025</td></tr> <tr><td>2005 through 2009</td><td>2026</td></tr> <tr><td>2010 through 2012</td><td>2027</td></tr> <tr><td>2013 through 2014</td><td>2028</td></tr> <tr><td>2015 through 2016</td><td>2029</td></tr> <tr><td>2017 through 2018</td><td>2030</td></tr> <tr><td>2019 through 2020</td><td>2031</td></tr> <tr><td>2021 through 2022</td><td>2032</td></tr> <tr><td>2023 and beyond</td><td>Ten years after year of approval</td></tr> </tbody> </table>	Year the Plan was Approved	Year in Which Resubmission is Required	Prior to 1980	2020	1980 through 1984	2021	1985 through 1989	2022	1990 through 1994	2023	1995 through 1999	2024	2000 through 2004	2025	2005 through 2009	2026	2010 through 2012	2027	2013 through 2014	2028	2015 through 2016	2029	2017 through 2018	2030	2019 through 2020	2031	2021 through 2022	2032	2023 and beyond	Ten years after year of approval	See comment to § 550.310(c)(1) above.	In order to ensure that your emissions remain compliant with OCSLA starting in 2020, BOEM will conduct periodic reviews of plans approved prior to the effective date of the new exemption thresholds. To accomplish this, from that year forward, you must submit the air quality component of your previously approved most recently approved supplemental or revised plan according to the following schedule, regardless of whether you have a change in emissions. Delete Table below. <table border="1"> <thead> <tr> <th>Year the Plan was Approved</th> <th>Year in Which Resubmission is Required</th> </tr> </thead> <tbody> <tr><td>Prior to 1980</td><td>2020</td></tr> <tr><td>1980 through 1984</td><td>2021</td></tr> <tr><td>1985 through 1989</td><td>2022</td></tr> <tr><td>1990 through 1994</td><td>2023</td></tr> <tr><td>1995 through 1999</td><td>2024</td></tr> <tr><td>2000 through 2004</td><td>2025</td></tr> <tr><td>2005 through 2009</td><td>2026</td></tr> <tr><td>2010 through 2012</td><td>2027</td></tr> <tr><td>2013 through 2014</td><td>2028</td></tr> <tr><td>2015 through 2016</td><td>2029</td></tr> <tr><td>2017 through 2018</td><td>2030</td></tr> <tr><td>2019 through 2020</td><td>2031</td></tr> <tr><td>2021 through 2022</td><td>2032</td></tr> <tr><td>2023 and beyond</td><td>Ten years after year of approval</td></tr> </tbody> </table>	Year the Plan was Approved	Year in Which Resubmission is Required	Prior to 1980	2020	1980 through 1984	2021	1985 through 1989	2022	1990 through 1994	2023	1995 through 1999	2024	2000 through 2004	2025	2005 through 2009	2026	2010 through 2012	2027	2013 through 2014	2028	2015 through 2016	2029	2017 through 2018	2030	2019 through 2020	2031	2021 through 2022	2032	2023 and beyond	Ten years after year of approval
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	550.310(c)(2)(i)	The plan is due to BOEM on the same month as the month in which the plan was originally approved.	See comment to § 550.310(c)(1) above.	The plan is due to BOEM on the same month as the month in which the plan was originally most recently approved.																																																												

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	550.310(c)(2)(ii)	For an initially approved plan, the lessee or operator is required to resubmit the plan in accordance with the table in paragraph (c)(2) of this section.	See comment to § 550.310(c)(1) above.	For an initially approved plan, the lessee or operator is required to resubmit the plan in accordance with the table in paragraph (c)(2) of this section.
	550.310(c)(2)(iii)	If a revised, modified, resubmitted, or supplemental plan is submitted within ten years from the date of the initial plan submittal, the new resubmission date would be ten years from the date of approval of the revised, modified, resubmitted, or supplemental plan.	See comment to § 550.310(c)(1) above.	If a revised, modified, resubmitted, or supplemental plan is submitted within ten years from the date of the initial plan submittal, the new resubmission date would be ten years from the date of approval of the revised, modified, resubmitted, or supplemental plan.
	550.310(c)(2)(iv)	If you fail to submit a revised plan as required under this section, then the previous approval of your plan is revoked. You may be subject to civil penalties or other appropriate sanctions for a regulatory violation, including the requirement to cease operations, as provided by 43 U.S.C. 1350.	See comment to § 550.310(c)(1) above.	If you fail to submit a revised plan as required under this section, then the previous approval of your plan is revoked. You may be subject to civil penalties or other appropriate sanctions for a regulatory violation, including the requirement to cease operations, as provided by 43 U.S.C. 1350.
<i>Under what circumstances will I be required to measure and report my actual emissions?</i>	550.311(a)	<i>Compliance demonstration conditions.</i> Under any of the following conditions, you must demonstrate that your actual emissions have at all times and continue to be in compliance with your previously approved plan:	It is requested that the unnecessary language be removed from this provision.	<i>Compliance demonstration conditions.</i> Under any of the following conditions, you must demonstrate that your actual emissions are in compliance with your previously approved plan:
	550.311(a)(1)	Your plan is approved subject to the implementation of BACT or emissions credits.	It is requested that BOEM limit monitoring of actual emission to sources equipped with control technology required as part of BACT review.	Your plan is approved subject to the implementation of BACT or emissions credits.
	550.311(a)(2)	Any emission source on your facility uses an engine that is not certified by the USEPA consistent with the requirements of 40 CFR 1042 or 40 CFR 1043, for U.S.-flag vessels, or that is not certified to the MARPOL Annex VI Regulation 13 requirements as required by the Act to Prevent Pollution from Ships, for foreign-flag vessels operating in the U.S.	See comment to § 550.311(a)(1) above.	Any emission source on your facility uses an engine that is not certified by the USEPA consistent with the requirements of 40 CFR 1042 or 40 CFR 1043, for U.S.-flag vessels, or that is not certified to the MARPOL Annex VI Regulation 13 requirements as required by the Act to Prevent Pollution from Ships, for foreign-flag vessels operating in the U.S.
	550.311(a)(3)	The Regional Supervisor determines that your projected emissions, or complex total emissions, for any criteria or precursor air pollutant, calculated on either an annual basis or on the basis of a 12-month rolling sum, may significantly underestimate your actual emissions based either on historical data about your emissions sources or on ambient air monitoring.	See comment to § 550.311(a)(1) above.	The Regional Supervisor determines that your projected emissions, or complex total emissions, for any criteria or precursor air pollutant, calculated on either an annual basis or on the basis of a 12-month rolling sum, may significantly underestimate your actual emissions based either on historical data about your emissions sources or on ambient air monitoring.
	550.311(a)(4)	BOEM determines that your facility causes or contributes to an exceedance of the NAAQS in any State.	The requested change is proposed to provide additional clarity to this provision.	BOEM Regional Supervisor determines that your facility causes or contributes to an exceedance of the NAAQS in any State.
	550.311(b)	<i>Emissions reporting requirements.</i> If you are required to make the demonstration described in this section:	No comments on this provision.	N/A
	550.311(b)(1)	Your measurement of actual emissions must include enough of your emissions sources to ensure that the actual emissions associated with facilities and MSCs operating under your approved plan are consistent with the projected emissions approved for your plan. You must consider every source that was included in your approved plan in addition to any source that would be classified as part of your projected emissions if your plan were resubmitted under the current regulations.	As discussed in Section 11.2 of our comments BOEM should limit the monitoring of actual emissions to emission sources installed with BACT. It would be more appropriate for the operators to propose which specific sources will be monitored as part of plan submittals as already required by 550.205(k). Additionally, as explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. Therefore, we request that this provision be deleted.	Your measurement of actual emissions must include enough of your emissions sources to ensure that the actual emissions associated with facilities and MSCs operating under your approved plan are consistent with the projected emissions approved for your plan. You must consider every source that was included in your approved plan in addition to any source that would be classified as part of your projected emissions if your plan were resubmitted under the current regulations.
	550.311(b)(2)	BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment:	See comment to § 550.311(b)(1) above.	BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment:
	550.311(b)(2)(i)	For facilities, the required monitoring and reporting of engines would typically include: (A) Onboard facility engines; (B) Power generation engines; (C) Hydraulic power units (HPU) engines; (D) Deck cranes; (E) Cementing units; (F) Engines with a maximum power rating exceeding 200 hp (149 kW).	See comment to § 550.311(b)(1) above.	For facilities, the required monitoring and reporting of engines would typically include: (A) Onboard facility engines; (B) Power generation engines; (C) Hydraulic power units (HPU) engines; (D) Deck cranes; (E) Cementing units; (F) Engines with a maximum power rating exceeding 200 hp (149 kW).
	550.311(b)(2)(ii)	For facilities, monitoring and reporting would typically exclude: (A) Propulsion engines; (B) Boilers and incinerators; (C) Emergency generators; (D) Lifeboat engines.	See comment to § 550.311(b)(1) above.	For facilities, monitoring and reporting would typically exclude: (A) Propulsion engines; (B) Boilers and incinerators; (C) Emergency generators; (D) Lifeboat engines.

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New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.311(b)(2)(iii)	For MSCs the sources, monitoring and reporting would likely include: (A) Propulsion engines; (B) Power generation engines; (C) Marine auxiliary engines; or (D) Engines with a maximum power rating exceeding 200 hp (149 kW).	See comment to § 550.311(b)(1) above.	For MSCs the sources, monitoring and reporting would likely include: (A) Propulsion engines; (B) Power generation engines; (C) Marine auxiliary engines; or (D) Engines with a maximum power rating exceeding 200 hp (149 kW).
	550.311(b)(2)(iv)	MSCs monitoring and reporting would typically exclude boilers and incinerators, emergency generators, and any engines onboard science vessels, OSVs, or lifeboats.	See comment to § 550.311(b)(1) above.	MSCs monitoring and reporting would typically exclude boilers and incinerators, emergency generators, and any engines onboard science vessels, OSVs, or lifeboats.
	550.311(b)(3)	Your demonstration must reflect your actual operations on the OCS and must be based exclusively on data derived from your actual equipment and not only on the basis of ECEs or fuel logs or activity data.	See comment to § 550.311(b)(1) above.	Your demonstration must reflect your actual operations on the OCS and must be based exclusively on data derived from your actual equipment and not only on the basis of ECEs or fuel logs or activity data.
	550.311(b)(4)	You must be able to demonstrate that the data submitted to BOEM under this section is consistent with any data provided to BOEM under the requirements of § 550.187.	See comment to § 550.311(b)(1) above.	You must be able to demonstrate that the data submitted to BOEM under this section is consistent with any data provided to BOEM under the requirements of § 550.187.
	550.311(b)(5)	You must provide the information required for this demonstration in a manner and on a schedule determined by the Regional Supervisor.	See comment to § 550.311(b)(1) above.	You must provide the information required for this demonstration in a manner and on a schedule determined by the Regional Supervisor.
	550.311(c)	<i>Notification requirements.</i> If, on the basis of your demonstration of actual emissions, you determine at any time your actual emissions exceed your projected emissions for any pollutant you must notify BOEM and provide BOEM with the appropriate data regarding the exceedance.	As BOEM has greatly expanded the number of emissions sources that have to be identified in the plan submittal, each additional source represents a potential whereby actual emissions of the emission source could exceed its projected emissions. If BOEM expects this level of granularity, the administrative burden on operators is substantial. We request that notifications of an exceedance of projected emissions be based on the sum of the entire facility annual emissions.	<i>Notification requirements.</i> If, on the basis of your demonstration of actual emissions, you determine at any time your facility's actual annual emissions exceed your projected annual emissions as described in your plan for any pollutant you must notify BOEM and provide BOEM with the appropriate data regarding the exceedance.
	550.311(d)	<i>Data submittal requirements.</i> You must submit data and information in a format, and using the forms as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method authorized by BOEM.	It is requested that OCS operators be provided an opportunity to review and comment on any forms that may be implemented through the formal rule making process.	<i>Data submittal requirements.</i> You must submit data and information in a standard format, and using the forms as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method authorized by BOEM.
<i>What post-approval recordkeeping and reporting is required?</i>	550.312(a)	<i>Stack testing.</i> If stack testing was used as a method to develop your emissions factors under § 550.205 or was used to develop any of the other information submitted pursuant to that section, then you must conduct the stack testing every three years and report the results, utilizing the General Provisions for Determining Standards of Performance for New Stationary Sources, Available at 40 CFR 60.8.	In most onshore permits and stack test provisions in federal standards, stack testing is limited to major emissions units and is limited to only initial testing or testing if modifications to the equipment are undertaken. Stack testing is far more complicated offshore than onshore due to safety considerations and space constraints, and should be limited accordingly. Considering the remoteness of the OCS facilities, and the safety considerations and space constraints, stack testing, at most, should be required only for the largest emissions units at a facility and then only initially or after significant modifications to the emissions unit that would make the previous testing invalid. Therefore, we request that this provision be modified to eliminate the requirement to repeat testing every three years. Furthermore, we request the removal of the reference to 40 CFR 60.8 as this provision does not specify the reporting requirements associated with stack testing.	<i>Stack testing.</i> If stack testing was used as a method to develop your emissions factors under § 550.205 or was used to develop any of the other information submitted pursuant to that section, then you must conduct the stack testing every three years and report the results, utilizing the General Provisions for Determining Standards of Performance for New Stationary Sources, Available at 40 CFR 60.8.
	550.312(b)	<i>Fuel logs and activity data.</i> In order to demonstrate compliance with your plan, you must retain information on monthly fuel consumption, for each emissions source, including attributed emissions sources, showing the quantity, type, and sulphur content of fuel used; collect facility and equipment usage information, including hours of operation at each percent of capacity for each emissions source. Venting, flaring, flashing and any other release of any air pollutant emissions that would not otherwise be accounted for by fuel consumption must be reported for any emissions source that generates criteria air pollutants or precursor air pollutants in connection with OCS activities.	As discussed in Section 11.4 of our comments the implementation of individual engine and emission source fuel or activity data monitoring is extremely costly and the benefits do not outweigh the costs. We request that BOEM revise these requirements to apply only to substantial emissions sources.	<i>Fuel logs and activity data.</i> In order to demonstrate compliance with your plan, you must retain information on monthly fuel consumption, for each emissions source, including attributed emissions sources, showing the quantity, type, and sulphur content of fuel used; collect facility and equipment usage information, including hours of operation at each percent of capacity for each emissions source. Venting, flaring, flashing and any other release of any air pollutant emissions that would not otherwise be accounted for by fuel consumption must be reported for any emissions source that generates criteria air pollutants or precursor air pollutants in connection with OCS activities.
	550.312(b)(1)	You must retain this information for a period of no less than ten years. You must submit this information to BOEM on a schedule set by the Regional Director.	A ten-year recordkeeping requirement is unprecedented, as EPA and States require facilities to retain information for periods ranging between two and five years. BOEM did not explain its basis for selecting a ten year period or why a facility must continue to keep copies of information for such a lengthy time when it already provides this information to BOEM on a periodic basis. Therefore, it is requested that the recordkeeping time period be reduced to five years or the life of the plan, whichever is less.	You must retain this information for a period of no less than ten years five years or the life of your plan, whichever is less. You must submit this information to BOEM on a schedule set by the Regional Director.

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	550.312(b)(2)	If BOEM obtains the relevant data for your attributed emissions from an independent third party, then the Regional Supervisor may waive the requirement to submit fuel logs or collect facility and equipment usage information for MSCs.	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, this provision should be removed.	If BOEM obtains the relevant data for your attributed emissions from an independent third party, then the Regional Supervisor may waive the requirement to submit fuel logs or collect facility and equipment usage information for MSCs.
	550.312(b)(3)	<i>Electronic Records.</i> Record-keeping and reporting must be consistent with the USEPA's requirements for electronic reporting and recordkeeping requirements for new source performance standards.	It is requested that BOEM separate its reporting requirements from those of EPA. Adopting parts of the NSPS will create confusion and inconsistency in reporting.	<i>Electronic Records.</i> Record-keeping and reporting must be consistent with the BOEM's USEPA's standard requirements for electronic reporting and recordkeeping requirements for new source performance standards.
	550.312(c)	<i>Meteorological reporting.</i> The Regional Supervisor may require, for a period of time and in a manner approved or prescribed, that you collect and report meteorological data from any of your facilities. The Regional Supervisor may allow you to substitute facility-specific data for meteorological data derived from any other mutually agreed upon location.	As discussed in Section 1.5.2 of our comments, this proposed provision fails to inform the regulated community of what is required and consequently establishes a framework for rulemaking without due process. This provision must be sufficiently clear and specific so the regulated community has "fair notice" of the regulatory requirements. As such, it is requested that this provision be deleted as currently written.	<i>Meteorological reporting.</i> The Regional Supervisor may require, for a period of time and in a manner approved or prescribed, that you collect and report meteorological data from any of your facilities. The Regional Supervisor may allow you to substitute facility-specific data for meteorological data derived from any other mutually agreed upon location.
	550.312(d)	<i>Other information.</i> Notwithstanding any other provision within this subpart, the Regional Supervisor may require you to provide any other information within your possession, or otherwise reasonably obtainable, to support any finding or determination under this subpart.	This provision is ambiguous and unclear and it is requested to be removed from the rule.	<i>Other information.</i> Notwithstanding any other provision within this subpart, the Regional Supervisor may require you to provide any other information within your possession, or otherwise reasonably obtainable, to support any finding or determination under this subpart.
	550.312(e)	<i>Additional requirements imposed by other agencies.</i> None of the provisions of this section would prevent the imposition of additional monitoring or reporting requirements on the part of BSEE or any other federal agency.	It is requested that this provision be deleted as additional monitoring and reporting requirements imposed by other agencies are not relevant to BOEM's authority and do not belong in this regulation.	<i>Additional requirements imposed by other agencies.</i> None of the provisions of this section would prevent the imposition of additional monitoring or reporting requirements on the part of BSEE or any other federal agency.
Under what circumstances will BOEM impose additional requirements on facilities operating under already approved plans?	550.313(a)	BOEM may impose additional air quality requirements on facilities operating under already approved plans if an applicable AAQSB changes or if BOEM determines:	As discussed in Section 1.5.1 of our comments, we request that the provisions of § 550.313 be deleted in its entirety or rewritten to provided much need clarification and ensure that the statutory authority of section 5(a)(8) of OCSLA is not exceeded.	BOEM may impose additional air quality requirements on facilities operating under already approved plans if an applicable AAQSB changes or if BOEM determines:
	550.313(a)(1)	Your operations are causing or contributing to a violation of the NAAQS, either individually or in combination with any other offshore operations;	See comment to § 550.313(a) above.	Your operations are causing or contributing to a violation of the NAAQS, either individually or in combination with any other offshore operations;
	550.313(a)(2)	Your plan was approved with either a NO _x waiver or a VOC waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x or VOCs would contribute to an increase in the ambient O ₃ concentration such that the NAAQS for O ₃ may be exceeded (in an attainment area), or the NAAQS for O ₃ would continue to be exceeded (in an area that is non-attainment for O ₃);	See comment to § 550.313(a) above.	Your plan was approved with either a NO _x waiver or a VOC waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x or VOCs would contribute to an increase in the ambient O ₃ concentration such that the NAAQS for O ₃ may be exceeded (in an attainment area), or the NAAQS for O ₃ would continue to be exceeded (in an area that is non-attainment for O ₃);
	550.313(a)(3)	Your plan was approved with a NO _x waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x would contribute to an increase in the ambient concentration of NO _x such that the NAAQS for NO _x may be exceeded (in an attainment area), or the NAAQS for NO _x would continue to be exceeded (in an area that is non-attainment for NO _x);	See comment to § 550.313(a) above.	Your plan was approved with a NO _x waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x would contribute to an increase in the ambient concentration of NO _x such that the NAAQS for NO _x may be exceeded (in an attainment area), or the NAAQS for NO _x would continue to be exceeded (in an area that is non-attainment for NO _x);
	550.313(a)(4)	Your operation is emitting unauthorized air pollutants;	See comment to § 550.313(a) above. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants above levels approve in the plan for the facility.	Your operation is emitting unauthorized air pollutants;
	550.313(a)(5)	Your operation is creating conditions posing an unreasonable risk to public health or welfare; or	See comment to § 550.313(a) above.	Your operation is creating conditions posing an unreasonable risk to public health or welfare; or
	550.313(a)(6)	Your operation is violating any applicable federal, State or tribal law related to air quality.	See comment to § 550.313(a) above. Furthermore, as discussed in Section 1.2.6 of our comments, BOEM lacks the authority to impose requirements unrelated to compliance with the NAAQS on any OCS facility. As such, BOEM has no authority to enforce violations of regulations under the jurisdiction of other agencies.	Your operation is violating any applicable federal, State or tribal law related to air quality.

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.313(b)	If a plan was approved for a short-term facility that becomes a long-term facility, a new air quality plan must be submitted for the facility under the standards applicable to a long-term facility. If this reclassification resulted from adverse weather conditions, or other circumstances beyond your control, that prevented operations in your lease area, the Regional Director may grant a temporary exception for a period not to exceed the number of months that you were unable to operate.	No comments on this provision.	N/A
<i>Under what circumstances will the Regional Supervisor review the projected emissions from my existing facility or facilities?</i>	550.314(a)	A State, or a Federally-recognized Indian tribe, may request the Regional Supervisor to supply it with the air pollution data regarding an existing facility's projected emissions, when such data are needed either for the updating of the State's emissions inventory or because a State believes an existing facility's projected emissions may cause or contribute to a violation of the NAAQS.	As discussed in Section 2.2 of our comments, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed. Furthermore, it is requested that the term "believes" be replaced with the term "determined."	A State, or a Federally-recognized Indian tribe, may request the Regional Supervisor to supply it with the air pollution data regarding an existing facility's projected emissions, when such data are needed either for the updating of the State's emissions inventory or because a State determined believes an existing facility's projected emissions may cause or contribute to a violation of the NAAQS.
	550.314(b)	The Regional Supervisor may require you to submit air pollutant emissions data to the State, or a Federally-recognized Indian tribe, submitting such a request.	See comments to § 550.314(a) above.	The Regional Supervisor may require you to submit air pollutant emissions data to the State, or a Federally-recognized Indian tribe, submitting such a request.
	550.314(c)	The State, or a Federally-recognized Indian tribe, submitting a request may submit information to BOEM that it believes indicates projected emissions from an existing facility may cause or contribute to a violation of the NAAQS. You will be given the opportunity to present information to the Regional Supervisor that demonstrates that your facility's projected emissions do not cause such an effect.	See comments to § 550.314(a) above.	The State, or a Federally-recognized Indian tribe, submitting a request may submit information to BOEM that it believes indicates projected emissions from an existing facility may cause or contribute to a violation of the NAAQS. You will be given the opportunity to present information to the Regional Supervisor that demonstrates that your facility's projected emissions do not cause such an effect.
	550.314(d)	The Regional Supervisor will evaluate the new information submitted and will determine, based on the emissions data, the available meteorological data, and the distance of the facility from the SSB whether your actual emissions, including your attributed emissions, has the potential to cause or contribute to a violation of the NAAQS.	The requested changes are proposed to provide further clarity and to be consistent with previously discussed changes.	The Regional Supervisor will evaluate the new information submitted and will determine, based on the emissions data, the available meteorological data, and the distance of the facility from the SSB whether your facility's projected emissions, including your attributed emissions, has the potential to cause or contribute to a violation of the NAAQS.
	550.314(d)(1)	If the Regional Supervisor determines that your existing facility's projected emissions are unlikely to cause or contribute to a violation of the NAAQS, the Regional Supervisor will notify the requesting State, or a Federally-recognized Indian tribe, and you and explain the reasons for this finding.	See comments to § 550.314(a) above.	If the Regional Supervisor determines that your existing facility's projected emissions are unlikely to cause or contribute to a violation of the NAAQS, the Regional Supervisor will notify the requesting State, or a Federally-recognized Indian tribe, and you and explain the reasons for this finding.
	550.314(d)(2)	If the Regional Supervisor determines that your existing facility's projected emissions have the potential to cause or contribute to a violation of the NAAQS, you must submit the additional information that the Regional Supervisor requests in order for BOEM to determine whether or not your existing facility causes or contributes to a violation of the NAAQS. You must submit this information within 120 days of the Regional Supervisor's request, or within a longer period of time at the Regional Supervisor's discretion.	No comments on this provision.	N/A
<i>What are the air quality requirements for pipeline rights-of-way holders?</i>	550.1012(a)	When you apply for or acquire a ROW in any part of the OCS under the air quality regulatory jurisdiction of the Department, you must:	As discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that this provision be deleted.	When you apply for or acquire a ROW in any part of the OCS under the air quality regulatory jurisdiction of the Department, you must:
	550.1012(a)(1)	Include in your application the information required by § 550.205; and	See comments to § 550.1012(a) above.	Include in your application the information required by § 550.205; and
	550.1012(a)(2)	Demonstrate that your activities will comply with the requirements of subpart C of this part.	See comments to § 550.1012(a) above.	Demonstrate that your activities will comply with the requirements of subpart C of this part.
	550.1012(b)	For the purpose of this section:	See comments to § 550.1012(a) above.	For the purpose of this section:
	550.1012(b)(1)	Any requirement in either § 550.205 or subpart C of this part that refers to plans should be interpreted to apply equally to ROW applications except for the provision regarding the consolidation of multiple facilities (§ 550.303(d)) and for the periodic resubmission of plans (§ 550.310(c)).	See comments to § 550.1012(a) above.	Any requirement in either § 550.205 or subpart C of this part that refers to plans should be interpreted to apply equally to ROW applications except for the provision regarding the consolidation of multiple facilities (§ 550.303(d)) and for the periodic resubmission of plans (§ 550.310(c)).

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.1012(b)(2)	Any requirement in either § 550.205 or subpart C of this part that refers to lessees or operators applies equally to ROW holders or grantees, except that no additional requirements apply to any proposed or existing pipeline ROW or lease term pipeline holders, that are already included within the scope of an existing or proposed exploration or development plan.	See comments to § 550.1012(a) above.	Any requirement in either § 550.205 or subpart C of this part that refers to lessees or operators applies equally to ROW holders or grantees, except that no additional requirements apply to any proposed or existing pipeline ROW or lease term pipeline holders, that are already included within the scope of an existing or proposed exploration or development plan.
	550.1012(b)(3)	BOEM will notify BSEE of its determination that you have provided the information required by § 550.205 and met the requirements of subpart C of this part. If necessary, BOEM will notify BSEE of additional conditions necessary to ensure that your activities will comply with subpart C of this part.	See comments to § 550.1012(a) above.	BOEM will notify BSEE of its determination that you have provided the information required by § 550.205 and met the requirements of subpart C of this part. If necessary, BOEM will notify BSEE of additional conditions necessary to ensure that your activities will comply with subpart C of this part.

**APPENDIX B: COMMENTS ON INITIAL REGULATORY
IMPACT ANALYSIS**

Comments on the Initial Regulatory Impact Analysis

30 CFR 550 - Air Quality Control, Reporting, and Compliance; Proposed Rules

Docket ID No. BOEM-2013-0081

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EXECUTIVE SUMMARY

The Bureau of Ocean Energy Management (BOEM) has prepared an Initial Regulatory Impact Analysis (IRIA) of the proposed Air Quality Control, Reporting, and Compliance rules which aim to reduce NO_x (including nitrogen dioxide and nitric oxide) emissions and concentrations of pollutants associated with NO_x (including VOCs, SO_x, CO, and PM) generated from oil and gas operations within the Outer Continental Shelf (OCS). The changes proposed by BOEM for the Outer Continental Shelf alter the measurement periods, create unprecedented requirements for monitoring and photochemical dispersion modelling, and could impose costly new emission reduction measures.

Ramboll Environ (RE) was retained to assist in the development of comments on the economic arguments put forward by BOEM regarding anticipated costs and benefits of the proposed regulations. As part of this effort Ramboll Environ staff conducted a survey of the potential costs of compliance with the proposed rule, based on historical cost data from OCS operators and vendors. In addition, Ramboll Environ incorporated independent research and other publicly available information, when available, to validate and supplement the information provided by industry stakeholders. Where not otherwise cited, the results presented in this report are based on the survey conducted by Ramboll Environ.

The comments on the IRIA are organized into four categories: general comments, comments on the regulatory review process, comments on regulatory costs, and comments on regulatory benefits. Each comment section is summarized below.

GENERAL COMMENTS

1. Overall, Ramboll Environ finds that the costs of the rule significantly outweigh the benefits for a net cost of \$3.4 billion over the 10 year period.
2. BOEM estimates that the ten year net present value of the proposed regulation is negative \$97 million using a discount rate of three percent - which indicates that the cost of the regulation will exceed the benefit. This represents a government policy that is doing more harm than good.
3. The current BOEM benefit-cost analysis (BCA) overlooked or did not quantify many costs, such as the costs of installation and maintenance of emission reduction measures, and the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NO_x emissions.
4. The rule is premature since ongoing studies can affect the magnitude and direction of the proposed rule and its associated benefits and costs. As BOEM states on page 21 of the IRIA, "The results of the ongoing GOM and Alaska regional exemption studies will significantly change the number of plans required to model. BOEM does not have a basis at this time to estimate the direction or magnitude of this change".
5. The analysis assumes without justification that few, if any, operators will have to install BACT, but rather will be able to purchase NO_x emission credits in an emission trading market. Yet for most of the Air Quality Control Regions (AQCR) potentially affected, no markets currently exist. For those markets that do exist, should the rule be adopted as

proposed, the NO_x market would be flooded with demand for emission credits with no known source for increased supply. The result of this could be a significant increase in the price of emission credits thereby increasing the costs of buying offset credits. No analysis of these markets was conducted.

6. The regulation requires governmental approvals for many operational activities, yet there is no accounting for the cost of down time and delays, along with corresponding costs, while awaiting approvals.
7. There is no evidence provided by BOEM that NO₂ or ozone attainment levels are improved by the implementation of this rule. According to the IRIA the USEPA expects continued improvements over the next decade for air quality. By 2025, all of the Louisiana, Mississippi, Alabama and Florida coastal political subdivisions are expected to be in attainment for ozone (IRIA, page 33).
8. There is no accounting for uncertainty in the analysis, such as uncertainty in future oil prices, uncertainty in markets, uncertainty in future regulatory policies, or uncertainty in the values of key parameters in the modeling analysis.

REGULATORY REVIEW PROCEDURES

1. Executive Order 12866, which governs regulatory review, requires that agencies promulgating regulations must identify a problem that the rule will remedy. The IRIA fails to identify such a problem.
2. The best available scientific research on air quality in the OCS is still underway, thus making the regulation premature.
3. The proposed regulation duplicates regulatory efforts such as those under the International Convention for the Prevention of Pollution from Ships (MARPOL). The rule fails to incorporate USEPA and US Coast Guard enforcement of MARPOL Annex VI Air Pollution Prevention Requirements.
4. Consistent with the Regulatory Flexibility Act, the agency has acknowledged that there will be differential impacts on small firms but has failed to provide detailed analysis of these impacts or modify the proposed regulation to mitigate this impact.

TECHNICAL ANALYSIS OF COSTS

1. BOEM's IRIA includes inaccurate and limited cost information, which results in an underestimate of total costs (see Section 3 of this report). For example, where BOEM anticipates the first year of the regulation will cost \$22.9 million, Ramboll Environ estimates that the first year could cost more than \$529 million.
2. Over ten years, BOEM estimates that the present value of costs (at a 3 percent discount rate) will be \$289 million, while Ramboll Environ estimates the costs could be over \$3.4 billion.
3. The ten year timeframe of the BOEM analysis hides the fact that net losses to society will continue well after the year 2027, and will continue to grow.

4. The results of Ramboll Environ estimates of the true cost of the proposed regulation are shown in Table ES-1 below.

Table ES.1 – Comparing BOEM Cost Estimates and Ramboll Environ Estimates*				
Regulation Change	BOEM		RAMBOLL ENVIRON	
550 Subpart B	Year 1 Cost	10-Year Cost (3%)	Year 1 Cost	10-Year Cost (3%)
Contents of Exploration Plans	\$260,400	\$2,714,231	\$2,728,000	\$23,270,393
Contents of DPP and DOCD	\$444,154	\$4,402,546	\$5,766,000	\$49,185,150
Total Subpart B	\$704,554	\$7,116,777	\$8,494,000	\$72,455,543
550 Subpart C				
Air Quality Analyses in Plans	\$1,721,624	\$76,999,522	\$14,848,700	\$112,075,776
Emission Reduction Measures	\$17,290,668	\$139,946,251	\$66,143,391	\$600,498,895
Monitoring & Reporting	\$3,161,244	\$65,248,849	\$439,556,749	\$2,633,021,132
General	\$1,240	\$10,577	\$1,240	\$10,577
Total Subpart C	\$22,174,776	\$282,205,199	\$520,550,080	\$3,345,606,381
550 Subpart J				
Collect, maintain & submit all air quality records	\$62,496	\$533,104	\$62,496	\$533,104
TOTAL	\$22,941,826	\$289,855,080	\$529,106,576	\$3,418,595,027

*Totals may not sum due to rounding

TECHNICAL ANALYSIS OF BENEFITS

1. BOEM estimates the benefits of offshore emission reductions through the use of the data contained in the Offshore Economic Cost Model (OECM). However, the resolution of the OECM results is very wide (e.g. the same \$5,000/ton value of impact is assumed within a band of more than 100 miles in terms of the distance to the shore). Hence, it is difficult to see how the agency can justify claiming that moving the measurement boundary out from the coast to the state submerged boundary (a distance of a few miles) would actually increase the benefits; the model resolution is too coarse.
2. BOEM needs to estimate the impacts to onshore residents from offshore sources. The Agency used data generated from the Air Pollution Emissions Experiments and Policy (APEEP) model which contains data for only onshore impacts. APEEP uses data from within the contiguous US only and has no offshore component. In addition, uncertainties associated with the dose-response functions used from the APEEP model are not

considered. The standard errors associated with each of these components are not taken into account and no sensitivity analysis is provided.

3. BOEM needs to justify the theoretical basis of their approach using data drawn from the APEEP model and to calibrate the parameters of the model to actual offshore data. As it currently stands, BOEM is using observations drawn from a population of onshore impacts only with two variables, distance and compass bearing location, to predict offshore impacts. There is no rationale provided that the approach selected is correct nor is there any theoretical underpinning supporting the model specification provided. The model needs to be calibrated against actual offshore data. Otherwise, it is merely speculative and provides no basis for the rule.
4. Qualitative benefits are assessed by BOEM to ultimately outweigh the quantified net costs. These benefits include “reductions in lessee/operator costs,” and “increased compliance” through improved information. Both of these statements can and should be quantified, especially if assumed to be sufficiently significant to overwhelm the net costs (negative \$122 million over 10 years). Without this quantification, BOEM’s analysis does not support the promulgation of the rule.

1 General Comments

The Bureau of Ocean Energy Management (BOEM) has prepared an Initial Regulatory Impact Analysis¹ (IRIA) of the proposed Air Quality Control, Reporting, and Compliance rules for reducing NO_x (including nitrogen dioxide and nitric oxide) emissions and concentrations of pollutants associated with NO_x (including VOCs, SO_x, CO, and PM). The changes proposed by BOEM for the Outer Continental Shelf (OCS) alter the measurement periods, create unprecedented requirements for monitoring and modeling of air dispersion or photochemistry, and impose costly new emission reduction measures attributed to plan emissions. Comments on the IRIA have been collected by Ramboll Environ (RE) on behalf of certain trade organizations and are expressed in this document. The remainder of this section provides an overview of our findings. Section 2 describes BOEM's failure to follow regulatory procedures, Section 3 includes our technical summary and review of cost estimates, and Section 4 concludes with our technical analysis of benefit estimates.

This section provides some background on the proposed regulation and IRIA process. It then addresses the benefit-cost analysis and conclusions drawn in the IRIA and provides a summary of RE's assessment of the costs, as developed from OCS operator and vendor inputs. Other key general comments explained below in greater detail are:

- the failure of the agency to identify a problem that justifies the new regulation,
- the failure to demonstrate that this rule would hasten the progress toward attainment of air quality goals,
- dependence upon emissions trading markets without considering market capacity limitations,
- failure to address impacts on small firms,
- shortcomings of the IRIA with regard to incorporating uncertainty (or lack thereof),
- failure to address the potential for regulatory delays and resultant downtime in OCS production, and
- regulatory overreach presented by the proposed action.

1.1 Background Information

The Outer Continental Shelf Lands Act mandates that the OCS, which was deemed by Congress to be “a vital national resource,” be “made available for expeditious and orderly development, subject to environmental safeguards . . .” 43 U.S.C. § 1332(3). A reasoned balancing is thus required of Congress' goal of expeditious development with appropriate environmental safeguards. Yet such a balancing is impossible when estimates of the impact and compliance costs are “tremendously uncertain,” or have negative benefits, as BOEM has acknowledged in the IRIA.

¹ <https://www.regulations.gov/document?D=BOEM-2013-0081-002>, Air Quality Control, Reporting, and Compliance, Initial Regulatory Impact Analysis, March 3, 2016

In addition to this OCLSA requirement of weighing costs against benefits, a particularly stringent quantitative analysis is required for rules that will have an annual effect to the economy in excess of \$100 million. Due to Executive Orders 12866 and 13563, BOEM is required to use the best available information to calculate the benefits and costs of the proposed rule. This quantitative benefit-cost analysis will, by law, form a primary component of the rulemaking process.

BOEM used monetary values from the Air Pollution Emissions Experiments and Policy (APEEP) analysis model results to determine benefits from offshore NO_x reductions. The APEEP results are based on estimated onshore emissions impacts only associated with NO_x, particulate matter (PM), volatile organic compound (VOC) and sulfur dioxide (SO₂) emissions. The model was not used directly; rather some results from the model were used in an *ad hoc* specification to predict onshore impacts from offshore effects for NO_x only.

In addition, BOEM asserts that the rules will also improve air quality and reduce health expenditures from exposure to other air pollutants, but did not monetize their impacts because of the uncertain nature of their reductions and overall uncertainties related to their assessment.

1.2 Summary of Benefit-Cost Estimates showing Benefits do not Exceed Costs

BOEM's estimate of annualized costs presented in the IRIA are developed based on some (but not all) capital costs, one-time labor costs, on-going annual costs, and other emissions reduction costs. BOEM projects both the total costs and benefits for the first full year the rule is in effect (2017) and for each subsequent year until 2026. The net benefits are the difference between the total benefits and the total costs.

BOEM estimates a positive net benefit for only the period 2017 to 2019, and an increasingly negative net benefit from 2020 to 2026. In sum, BOEM estimates the net benefit over 10 years is -\$122 million (not discounted), showing the rule has an overall net cost.

Had BOEM more fully analyzed the costs and benefits, the negative benefits (net costs) would have been greater. Ramboll Environ reviewed BOEM's assumptions, calculations and analysis and updated the cost estimates. Our review finds significant errors in BOEM's IRIA cost and benefit estimates and that BOEM's net cost is significantly underestimated.

Overall, Ramboll Environ finds that the costs of the rule could significantly outweigh the benefits, and to a greater degree than that estimated by BOEM. Specifically:

- After correcting for BOEM's underestimated cost estimations, our estimate for total costs for the first year is \$529 million with no certainty of any benefits.
- This leads to a net cost of \$3.4 billion over the 10 year period.
- One of the most significant cost factors are for measurement of emissions using Parametric Emission Monitoring System (PEMS), costing up to \$785.7 million over the 10-year period of analysis.
- The costs of Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) are estimated by Ramboll Environ to be \$397.7 million over the

10-year period of analysis assuming only 5 units are required to install SCR per year. The number of units requiring BACT could be much higher.

- While the time frame in the IRIA is for 10 years, the true net cost to society could be much greater than that, as each year after the first 10 could present a significant additional net cost to the nation.

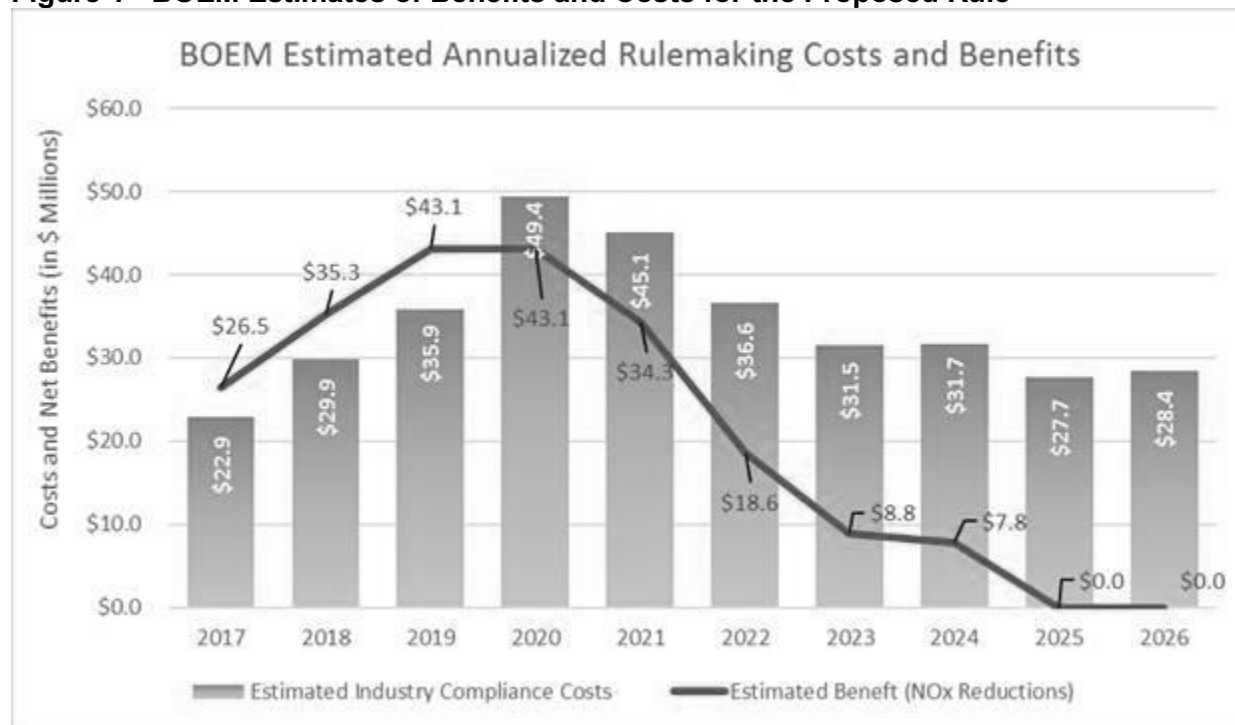
While BOEM concludes that the benefits of the rule do not exceed the costs, this acknowledgement is understated since the IRIA underestimates costs by only including information collection (IC) costs, and ignoring the costs of installation and maintenance of emission reduction measures, among other oversights. Furthermore, BOEM's cost estimates do not include the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NO_x emissions, and assumes without justification that few, if any, operators will have to install BACT of any type. BOEM assumes that NO_x emission credit trading will be a cheaper alternative and that credit trading at \$3,000 per ton will be easy and possible throughout the different Air Quality Control Regions (AQCRs) even though for most of those regions credit trading markets do not exist. There are numerous flaws in these assumptions and assertions which we detail in this report.

On page 5 of the IRIA, BOEM states that

“The net quantified benefits for this proposed rule are estimated to be positive in the first three years and **negative in all subsequent years of the 10-year window of this analysis.**” (emphasis added)

IRIA, page 5

In fact, the agency's analysis shows that over the course of the 10 year window of analysis, the total net cost of the proposed rule approaches \$122 million dollars, compared with a benefit that declines to zero after eight years (see Figure 1).

Figure 1 - BOEM Estimates of Benefits and Costs for the Proposed Rule

Based on the cost and benefit data presented in Figure 1, promulgation of the proposed rule would violate OCSLA's mandate of a reasoned balancing of "expeditious and orderly development" and environmental safeguards. It also would contravene the updated Executive Order (E.O.) 13563, which reaffirms E.O. 12866 and further states that agencies must,

*(1) propose or **adopt a regulation only upon a reasoned determination that its benefits justify its costs** (recognizing that some benefits and costs are difficult to quantify); (2) tailor its regulations to **impose the least burden on society**, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that **maximize net benefits** (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity).*

E.O. 13563, (emphasis added)²

If the benefit-cost analysis (BCA) determines that none of the proposed regulatory configurations provides an environmental or social benefit that is greater than the cost of executing the components of the rule, then OMB has the obligation to return the proposed rule.

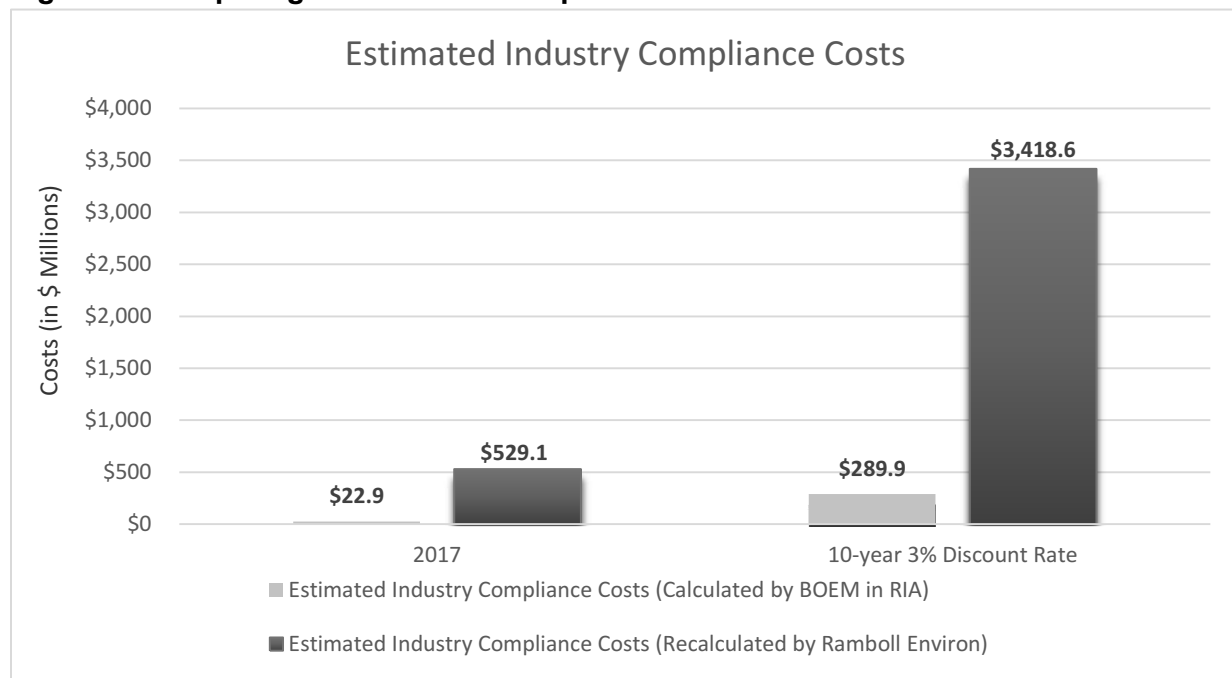
² The President. "Executive Order 13563, Improving Regulation and Regulatory Review." 76 Fed. Reg. 3821 (Jan. 18, 2011). Available at (<http://www.gpo.gov/fdsys/granule/CFR-2012-title3-vol1/CFR-2012-title3-vol1-eo13563/content-detail.html>).

Ramboll Environ conducted a survey of OCS operators and vendors to assist in its analysis of the accuracy of the cost estimates presented in the IRIA. Where costs estimates varied from the BOEM estimates, Ramboll Environ conducted research to verify the estimates and understand where and why the estimate departs from the BOEM estimate. The results of our research provide the basis of these comments on the IRIA, with details of the cost estimates provided in Chapter 3. Where estimates varied between firms, and between different potential interpretations of the proposed rule, we have provided a range of estimates but conservatively applied a lower value in our revision of BOEM's calculations.

Table 1 shows a comparison of BOEM's calculation of compliance costs compared to the compliance costs as recalculated within this analysis. The first year costs are estimated to be approximately \$23 million by BOEM, and over \$529 million by Ramboll Environ, representing a 23 fold increase. The ten year costs similarly represent a 12 fold increase over the BOEM estimates. The same data are shown graphically in Figure 2.

Table 1.1 – Industry Compliance Costs		
	Annual Cost in 2017 (Millions)	10-year Cost (Millions, using 3% Discount Rate)
BOEM Estimate	\$23	\$289
Ramboll Environ Estimate	\$529	\$3,418
Increase Factor (Ramboll Environ/BOEM)	23	12

Figure 2 –Comparing Estimates of Compliance Costs



1.3 Regulation is not Justified and is Premature

The regulatory review process follows guidance from E.O. 12866, which explains the federal regulatory philosophy and principles. The very first of these principles states,

“Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.”

E.O. 12866³

Yet BOEM has failed wholly to identify any substantial deficiencies with the current regulatory system. Neither has the agency addressed the significance of this unstated defect.

As part of the IRIA analysis, agencies are required to assess a range of regulatory alternatives as well as non-regulatory actions. As required under E.O. 12866, Section 6(a)(3)(C)(iii), the agency shall also provide to OIRA the following additional information developed as part of the agency’s decision-making process (unless prohibited by law):

“An assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, identified by the agencies or the public (including improving the current regulation and **reasonably viable non-regulatory actions...**”⁴ (emphasis added)

E.O. 12866

In this instance, the “no action” or baseline alternative for the IRIA specifies delaying the publication of the proposed regulatory changes until 2018 or 2019, when BOEM has completed the process of evaluating the current exemption threshold equations (IRIA pg. 64).

The IRIA offers several justifications as to why the proposed modifications to the rule should be adopted prior to the 2018 time frame. All of the provided justifications are vague and insufficient.

- The IRIA asserts that by waiting, the proposed revisions would “not be incorporated” into BOEM’s regulations and that benefits would not be realized (page 64 of the IRIA). Yet, BOEM’s own analysis indicates that the benefits of the proposed revisions even ignoring the costs are not significant, so it seems that waiting would save costs.

³ The President. “Executive Order 12866, Regulatory Planning and Review.” 58 Fed. Reg. 51735 (Sept. 30, 1993), page 1. *Amended by* Executive Order 13258 and Executive Order 13422. Executive Order 13497, signed January 30, 2009, revoked those amendments. Available at (<http://www.archives.gov/federal-register/executive-orders/pdf/12866.pdf>).

⁴ *ibid*

- The IRIA asserts that waiting until the 2018 results are published would “make it more difficult” for BOEM to meet its statutory duties. However, the IRIA offers no further explanation for, or evidence of, the source of this increased difficulty, or an explanation as to how a delay would impede BOEM from executing its statutory duties. In fact, the IRIA explicitly states that,

...it is BOEM’s current practice to update the SILs and AAls and add the additional air pollutants for which standards have been established by the USEPA even without changes in BOEM’s regulations

And,

Regardless of whether the current regulatory action occurs now or is postponed, once these studies have been completed, BOEM anticipates that it will update the exemption threshold (currently at § 550.303(c) and § 550.303(d) in the proposed regulations.

IRIA, pg. 64 & 65

This suggests that under current conditions, BOEM is already capable of making updates and/or meeting its statutory obligations without the need for the inefficient and costly revisions proposed by this rule.

1.4 No Evidence that Attainment Levels are Expected to Improve

Originally passed in 1953, the Outer Continental Shelf Lands Act (OCSLA) (43 U.S.C. §§ 1331-1356(a)) was designed to ensure that the United States had jurisdiction over the seabed floor, and the right to lease, explore, and develop and produce the associated mineral resources. In its initial configuration, OCSLA did not address air quality on the OCS. However, in September 1978, Congress amended the OCSLA, adding a new Section 5(a)(8) that grants the Secretary of the Interior authority to promulgate regulations

*for compliance with the national ambient air quality standards pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.), **to the extent that activities authorized under this Act significantly affect the air quality of any State**” (emphasis added).*

This authority is further limited by a requirement to weigh expeditious and orderly development with environmental safeguards. In 1980, BOEM used these authorities to develop the Air Quality Regulatory Program (AQRP) whose proposed revisions are the subject of this IRIA.

No evidence exists that the proposed rule will increase the number of areas that transition from non-attainment to attainment and/or an improvement in the rate at which attainment designations are achieved.

Indeed, according to data presented in the IRIA (pg. 34 and 35), BOEM expects continued improvements in air quality over the next decade so that by 2025 the affected GOM coastal political subdivisions will be in attainment before factoring in any of the benefits purported to be associated with the proposed rule changes.

1.5 Credit Market not a Viable Alternative

BOEM failed to study the true costs of a NO_x credit market and other allowances and failed to determine the impacts of this rule on the existing credit markets. The rule assumes that NO_x allowance credits exist and will be a less expensive alternative to BACT, costing only \$3,000 per ton. In fact, emission credit markets for most of the AQCRs do not exist.

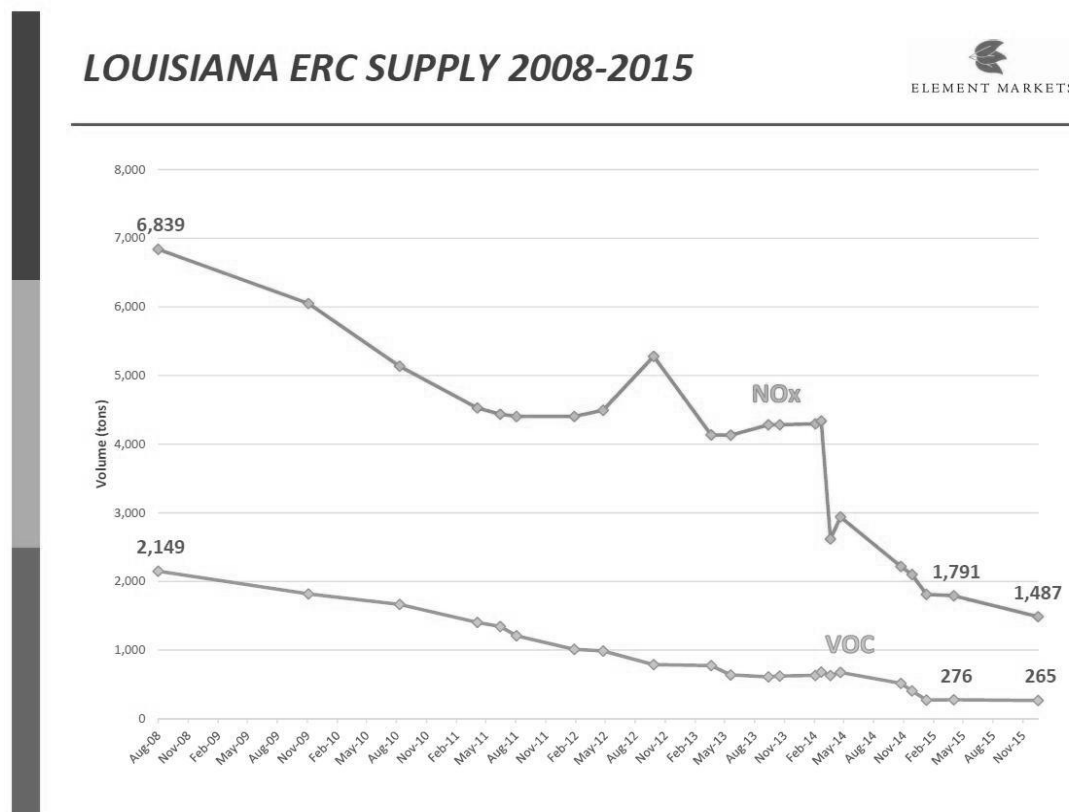
Considering past credit prices, which have regularly exceeded **\$50,000 per ton in the Houston-Galveston ozone non-attainment area**⁵, BOEM's estimate of a \$3,000 allowance price in a market where demand exceeds supply is very unlikely. In reality, the cost of NO_x credits could far exceed the magnitude of BOEM's assumed benefit of \$5,000 per ton. Furthermore, the impact of adding so many new entrants to the credit markets could have considerable impacts on existing market participants.

For ozone non-attainment areas in Louisiana, the price of NO_x allocation credits has fluctuated between \$3,000-5,000 per ton for fifteen years, until recent expansions in the non-attainment area. Since the expansions, the availability of credits has dropped by nearly 80 percent, and **NO_x allocation credits have now ranged in price from \$18,000-25,000 per ton** for credits expiring in ten years⁶. Figure 3 shows the dramatic decline in availability of NO_x emission reduction credits (ERC) in Louisiana over the last seven years. The decreased supply correlated to increased difficulty and expense in obtaining credits. If more firms decide to participate in a NO_x trading market due to this rule, general economic theory suggests that demand for credits will increase, the availability of credits decrease, and the price increase. There could be a disproportionately negative impact on smaller firms.

⁵ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016

⁶ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016

Figure 3 –Available Air Quality Credits in Louisiana



Source: Element Markets. Baton Rouge ERC Market Overview. May 21, 2015. 7

The NO_x allowance markets in Texas are significantly more complex. The Mass Emissions Cap and Trade Program (MECT) started in 2002 and allows for banking and trading of NO_x credits between regulated facilities in the Houston-Galveston nonattainment area⁸. New facilities do not receive an allocation and must purchase allowances from the market. Also in existence is the older Emission Reduction Credit (ERC) program, which allows participants to purchase a credit to emit⁹. Until 2002, NO_x ERCs were available for \$5,000 to \$10,000 per ton. After 2002, facilities producing greater than 10 tons of NO_x were required to join the MECT. Few NO_x ERCs have been available¹⁰, and many sources have chosen to temporarily shut down and bank credits while the prices are high.

⁷ Accessible at <http://la-awma.org/files/AWMA+presentation+by+Element+Markets+-+Louisiana+ERCs+5-21-2015.pdf>

⁸ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at <http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

⁹ Element Markets. The Scarcity and Expense of HGB Emission Reduction Credits: Issue and Opportunity. October 1, 2013. Accessible at <http://www.awma-gcc.org/docs/HGB%20-%20AWMA%20Presentation%20by%20Element%20Markets%2010-1-2013.pdf>

¹⁰ Element Markets. The Scarcity and Expense of HGB Emission Reduction Credits: Issue and

NO_x ERCs can be used for VOCs at a trading ratio, but MECT NO_x allowances cannot be used for VOC, causing NO_x ERCs to be more valuable. **NO_x ERCs have fluctuated between \$90,000 to \$125,000 per ton in Houston** and in 2014, the NO_x ERCs reached a high of **\$300,000 per ton** when very few were available¹¹. MECT NO_x stream credits range from **\$53,000 to \$65,000 per ton** with 40,000 tons traded annually. Roughly 28,000 tons of NO_x ERCs are available, but, based on past experience, the price can change dramatically as the availability of credits fluctuates¹².

In most attainment areas along the Gulf Coast, there are no credits available for purchase, but the Texas Commission on Environmental Quality (TCEQ) operates a voluntary Discrete Emission Credit (DEC) program, issuing Discrete Emission Reduction Credits (DERCs) for both mobile and stationary sources¹³. We are not aware of any similar programs in Mississippi, Alabama, Florida, or Louisiana, although Louisiana has proposed regulation to do just that.

Due to the existence of the MECT program in Texas, there is very low generation of NO_x DERCs¹⁴. In 2012, the average price of a NO_x DERC was \$4,750, but sold for a high of \$11,266 per ton in 2009¹⁵. Note that these are the NO_x allowance prices in the **voluntary trading program in attainment areas**, indicating that NO_x allowances in **non-attainment areas** could be much more expensive than the \$3,000 per ton assumed in the IRIA. This indicates that, contrary to BOEM's assertions in the IRIA, BACT may be the cheapest emissions control alternative, but BACTs is still significantly more costly than the benefit of \$5,000 per ton from NO_x emissions reductions claimed by BOEM.

Regarding other criteria air pollutants, there are two non-attainment areas for the 8-hour ozone EPA standard in the Gulf of Mexico and two for the 1-hour sulfur dioxide (SO₂) EPA standard. Baton Rouge (LA) and Houston-Galveston (TX)¹⁶ are non-attainment areas for ozone and

Opportunity. October 1, 2013. Accessible at <http://www.awma-gcc.org/docs/HGB%20-%20AWMA%20Presentation%20by%20Element%20Markets%2010-1-2013.pdf>

¹¹ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016.

¹² Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016.

¹³ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at

<http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

¹⁴ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at

<http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

¹⁵ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at

<http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

¹⁶ Environmental Protection Agency. Current Nonattainment Counties for All Criteria Pollutants. Updated April 22, 2016. Accessible at <http://www3.epa.gov/airquality/greenbook/ancl.html>

Tampa-Hillsborough County (FL) and New Orleans-St. Bernard Parish (LA) are non- attainment areas for SO₂¹⁷ .

A SO_x market does not currently exist in Louisiana or Texas, but default allowance prices are roughly \$5,000 per ton when starting a market. As a point of comparison, SO_x prices in California now reach \$18,000-20,000 per ton, but are less in New Jersey, where they are often bought at a 40-to-1 ratio for Particulate Matter (PM)) credits (\$10,000 per ton)¹⁸.

The rule as proposed would require operators to seek ERCs in the affected AQCR. Although not accounted for in the rule, the use of emission credits offshore would likely require additional modelling to document that the reductions would positively impact the affected AQCR. This suggests the vast majority of potential ERCs that would be needed would be supplied in markets that have yet to be established and agencies responsible for tracking, maintaining and overseeing the markets have little or no experience in these types of markets. BOEM appears to underestimate the start-up time and transactions costs associated with establishing a smoothly running market with liquidity and stable prices. Rather BOEM is assuming credits can be bought within all of the AQCRs for an average price of \$3,000 per ton within three years of rule implementation.

The fact that credit markets for other criteria air pollutants (excluding NO_x) do not yet exist and that establishing these markets is costly from both a financial and temporal perspective indicates that it will not be feasible for these pollutants to be offset using emissions credits as an ERM.

1.6 Differential Impacts on Smaller Firms

BOEM acknowledges in the IRIA that the proposed changes have the potential to unduly burden small businesses.

*...Based on this initial analysis, BOEM expects the implementation of this proposed rule to have **an economic impact on a substantial number of small entities** under 5 U.S.C. 605(b).*

IRIA, page 84 (emphasis added)

BOEM estimates that the proposed rule changes will affect 130 companies operating in the GOM, 69 percent of which (90 firms) meet the Small Business Administration's North American Industry Classification System (NAICS) criteria for classification as a small business. The IRIA suggests that for small firms that are well-capitalized the incremental cost of additional or consolidated reporting is "a small cost in the context of an exploration or development project" (IRIA pg. 86). The potential implication of these statements is that because the operations are well capitalized the additional cost burdens will not be unreasonable or unbearable. However, no information is presented that indicates that any type of marginal analysis was conducted to

¹⁷ Environmental Protection Agency. Current Nonattainment Counties for All Criteria Pollutants. Updated April 22, 2016. Accessible at <http://www3.epa.gov/airquality/greenbook/ancl.html>

¹⁸ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016

determine the magnitude of the impact of these additional costs or to evaluate whether, and at what point, the additional costs of the new requirements might push a small business beyond the break-even point of operations. Further, the notion that small firms are well capitalized is unsupported and ignores current economic conditions.

The analysis takes a very broad approach, suggesting that since 37 percent of the historically submitted plans can be attributed to small businesses, 37 percent of the total anticipated calculated costs of reporting and compliance can also be attributed to operations that meet the small business criteria (IRIA pg. 86). If the assumption is that costs of the proposed rule are the same per firm, then it stands to reason that such a cost represents a much higher share of total cost to a small firm than it does to a large firm and as such, would differentially impact small firms.

Beyond the failure to fully examine the direct impacts of the costs associated with the proposed rule on small businesses operating in the industry directly, the analysis presented does not look at the second or third order impacts on second and third tier support industries, many of which are small businesses.

For example, in the context of the emission credit trading markets, the IRIA fails to consider the impacts of the rule on existing market participants, some of which are small firms. Adding a large influx of demand for emission credits and allowances could dramatically increase the cost of emission credits, which could hurt the smallest market participants the most. If small, onshore industries are unable to procure emission credits in the market, they will be forced to shut down, impacting the community and the region. This will have extrapolating effects on employment and quality of life for the people in these regions. None of these impacts were considered in the IRIA but could be significant.

Even without the level of detail suggested above, the BOEM IRIA analysis concludes that small businesses will in fact be unduly affected by the proposed rule changes. In light of this conclusion, BOEM is statutorily obligated to explore and quantify the magnitude of that impact. BOEM failed to complete this work.

1.7 Uncertainty

The Initial Regulatory Impact Analysis recognizes uncertainties may exist regarding the availability and price of emissions offsets (pg. 43); uncertainty over exemption thresholds (pg. 43); and uncertainty associated with industry activity, technological innovation and future air quality standards (pg. 59). However little attempt is made in the IRIA to characterize and assess the level and impact uncertainty may have on the estimation of benefits and costs.

OMB suggests because uncertainty is basic to many analyses, its effects should be analyzed and reported.

Useful information in such a report would include the key sources of uncertainty; expected value estimates of outcomes; the sensitivity of results to important sources of uncertainty; and where possible, the probability distributions of benefits, costs, and net benefits.

On page 42 the IRIA states:

While the price of NO_x credits can vary widely, credits are assumed to be offsets that cost an average of \$3,000 per ton of NO_x reduced in this analysis.

No attempt is made to characterize the uncertainty or understand the nature of the volatility in emission credit prices but rather it is assumed prices are constant for the analysis. In fact, for most of the AQCRs, markets do not exist. Data presented in Section 1.5 of this document for existing markets shows high volatility of prices. Uncertainties associated with establishing emission credit markets within the AQCRs were not presented in the IRIA. Rather it is assumed the NO_x emission credit price will stay at the low end of the historic range and not vary much even though existing emission credit markets have shown significantly higher average prices with large variances.

On the benefits assessment, BOEM failed to account for the uncertainties surrounding the estimates which include ambient air quality impacts, dose-response function values and monetized values. All these inputs and parameters are highly uncertain which BOEM failed to properly account in their analyses. For example, uncertainties associated with the dose-response functions used from the APEEP model are not considered. These relate changes in ambient pollutant concentrations to changes in the risk or probability of a given health effect. For example, ambient concentrations are highly variable for a specific area. Population effects are highly variable as well, depending on age and exposure profiles. The standard errors associated with each of these components are not taken into account and no sensitivity analysis is provided.

Given that the rule addresses offshore impacts, an offshore model is required. In particular, BOEM was required to estimate the impacts to onshore residents from offshore sources. However, BOEM used data generated from APEEP, which contains data for only onshore impacts. APEEP uses data from only within the contiguous US and has no offshore component. To estimate offshore effects, BOEM developed a "regression model" that describes the Gaussian transfer coefficients in APEEP as a function of the distance and compass direction between source and receptor locations. BOEM then used this regression model to predict the impacts from offshore locations. BOEM has essentially drawn observations from a population of onshore impacts only and is using only two variables - distance and compass bearing - to predict offshore impacts using a third order fitted polynomial equation.¹⁹ This approach is problematic for a number of reasons. First, the approach lacks any theoretical basis. There is no theory supporting the model specification, assuming other functional forms or additional variables will change the results. Moreover, the regression results explain less than twenty

¹⁹ U.S. Department of the Interior Bureau of Ocean Energy Management. Forecasting Environmental and Social Externalities Associated with OCS Oil and Gas Development: The Revised Offshore Environmental Cost Model (OECM). OCS Study BOEM 2012-025. Appendix C

percent of the variance. It is very likely that the model is mis-specified and given the lack of theoretical basis also suffers from issues such as omitted variable errors. At a minimum, a sensitivity analysis should be conducted to better understand the implications of adding other variables and testing of various functional forms. This will help to better understand whether offshore impacts are affecting onshore populations. Finally, the model needs to be calibrated against actual offshore data. Otherwise it is merely speculative and provides no basis for the rule.

It is important to recognize that such price, modeling, and regulatory uncertainties can complicate objective, reliable, and meaningful quantitative measurement of the effects of new regulations. The IRIA fails to provide any analysis for handling price and market uncertainty and variability in the context of demonstrating impact to the oil and gas industry.

1.8 Failure to Include Potential Costs of Delays and Down Time

Economic costs include all costs and not simply financial expenditures. Additional monitoring, data collection, and permitting processes can result in additional down time or days of lost production. It has been demonstrated that these opportunity costs can be a significant component of overall costs.²⁰ As such, BOEM should evaluate these costs and include them in the benefit-cost calculation.

²⁰ Graham, J and C. Liu. Regulatory and quasi-regulatory activity without OMB and cost-benefit review. Harvard Journal of Law & Public Policy 37(2):425-445 · December 2013. ENVIRON International Corporation. Arctic Regulations Benefit Cost Analysis. 2014.
www.reginfo.gov/public/do/eoDownloadDocument?pubId=&eodoc=true...770

2 Failure to Follow Regulatory Procedures

Prior to the public release of draft regulations, the Office of Information and Regulatory Affairs, a division of the Office of Management and Budget (OMB) conducts a review, pursuant to Executive Order 12866. E.O. 12866 sets forth the broad principles agencies are required to adhere to when proposing new regulations. The order provides that agencies,

shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.

E.O. 12866, page 2

Pursuant to this guidance, it is the responsibility of the agency proposing a regulatory action to provide OMB with an analysis that describes and justifies the need for the proposed regulatory action and includes a BCA. As part of the BCA, agencies are required to assess a range of regulatory alternatives as well as non-regulatory solutions before proposing a regulatory action.

If OMB's review of the agency's BCA indicates that the proposed rule does not provide an environmental or social benefit that equals or exceeds the cost of executing the new rule, OMB has the authority to reject the proposed modification or to return the proposed rule to the agency for review and modification.

The draft IRIA and the proposed rule fail to analyze the impacts of the rule in a manner that is consistent with the 12 principles of good regulation as outlined in EO 12866. The most concerning of these failures of the 12 principles are as follows:

2.1 Principle 1: Identify the Existence of a Problem

E.O. 12866 requires that BOEM identify a problem of significance and demonstrate that the emissions from OCS facilities cause or contribute to violations of NAAQS. BOEM did not provide a rationale or demonstrate a need for the proposed new rule elements.

No data or examples are included that demonstrate an OCS facility has caused or contributed to a violation of the NAAQS onshore. The Environmental Assessment accompanying the proposed rule finds that the impact of the proposal would be "minimal," because "on the whole...OCS operations have a minimal impact on the air quality onshore."²¹ In the IRIA, BOEM states,

...air dispersion modeling does not show an impact to state air quality or the need for emission reduction measures.

IRIA, page 75

²¹ BOEM, March 2016 Environmental Assessment, Section 4.2 – Alternative B: No Action Alternative, Pg. 17

A review of the National Environmental Policy Act (NEPA) documents prepared by BOEM further confirms that OCS sources are not significantly affecting the air quality of any state. For example:

- BOEM's most recent Final Programmatic Environmental Impact Statement (PEIS) was published in 2012 and addressed the 2012-2017 OCS oil and gas leasing program in the Gulf of Mexico. The 2012-2017 PEIS concludes that emissions due to the oil and gas leasing program would not result in any exceedance of the NAAQS.
- The Draft PEIS for BOEM's 2017-2022 leasing program also concludes that the 2017-2022 program will result in a minor contribution to criteria pollutant concentrations, that the NAAQS will not be violated, and that the PSD increments will not be exceeded.

These findings by BOEM demonstrate that the rule is unnecessary. Additional information on this topic is found in Section 1.3 above and in the primary comment document.

2.2 Principle 3: Identification of Alternatives to Regulation

E.O. 12866 further requires that BOEM identify and explore alternatives. BOEM's IRIA focused on credit trading and the use of offsets but did not explore the costs of alternatives or even the cost of the No Action Alternative. Furthermore, BOEM did not research the true costs of NO_x credit trading.

It appears unlikely that affected entities can access \$3,000 per ton NO_x credits, as cited in the IRIA (see Section 1.5 of this report for a description of existing NO_x credit markets).

Furthermore, BOEM neglected to consider the impacts of this rule on existing NO_x emission trading markets, and how the rule would impact demand for NO_x credits.

2.3 Principle 5: Design a Regulation that is Cost-effective and Predictable

E.O. 12866 necessitates that BOEM design regulation in the most cost-effective manner, with a focus on incentives to innovation, consistency, predictability, costs of enforcement and compliance, flexibility, distributive impacts, and equity. Predictability is absent in this rule, largely due to the lack of clarification in the rule and the uncertainty over its true costs of implementation (see Section 3 of this document). In the IRIA, BOEM states that "the estimated impact and proposed rule compliance costs are tremendously uncertain" (page 17 of the IRIA).

BOEM failed to consider distributive impacts and impacts to small businesses in its IRIA, although BOEM acknowledges that the true costs of implementation may have considerable distributive impacts, "Based on this analysis, BOEM concludes that this proposed rule may have a significant economic impact on a substantial number of small entities" (page 87 of the IRIA).

While BOEM believes it is introducing regulatory flexibility by allowing for participation in NO_x markets, such markets are nonexistent or lack sufficient volume to accommodate the increased usage that the rule may generate. Consequently, this solution could be more expensive and have less regulatory certainty than BOEM suggests.

2.4 Principle 6: Demonstrate that the Benefits of the Regulation Exceed the Costs

E.O. 12866 mandates that the benefits of the regulation exceed the cost. While noting that there are many uncertainties in its analysis, BOEM calculates that the cost of the rule exceeds the benefits, and acknowledges that the benefits are difficult to determine with any degree of certainty.

2.5 Principle 7: Use the Best Reasonably Available Science Information

E.O. 12866 dictates that BOEM must base its decisions using the

best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation (p. 2).

In preparing this rule, BOEM failed to justify the necessity of the rule using best science and also failed to use best economics to consider the true impacts of the rule. Some of the science is still under review for the Offshore Emissions Cost Model.

It is impossible to know the future result of the exemption studies for the GOM or Arctic OCS. Accordingly, BOEM is not estimating the potential results or impact of this ongoing study in the estimated compliance costs for this rulemaking.

IRIA, page 20

The results of the ongoing GOM and Alaska regional exemption studies will significantly change the number of plans required to model. BOEM does not have a basis at this time to estimate the direction or magnitude of this change.

IRIA, page 21

The ongoing environmental studies in the GOM and Alaska will determine if the current exemption formulas should be revised to be protective of the current NAAQS. The proposed rule should not be considered until after the results of the studies are available.

2.6 Principle 10: Avoid Regulations that are Duplicative with Other Regulations

The tenth principle in E.O. 12866 states that agencies are to “avoid regulations that are inconsistent, incompatible, or duplicative with its other regulations or those of other Federal agencies” (p. 2). This rule proposes modifications to definitions and procedures that exceed BOEM’s mandate under OSCLA. BOEM’s proposed revisions further conflict with MARPOL governance of support vessels as administered by the USEPA and US Coast Guard.

2.7 Table Summary of Key E.O. 12866 Principles

Table 2.1 - Summary of Failure to Meet Principles of Regulation	
E.O. 12866 Principle	Draft IRIA
1: Justify need for the rule	BOEM does not provide justification for the rule (Sections 1.1- 1.3, 2.1)
3: Consider alternatives	BOEM does not thoroughly consider alternatives (including a No Action Alternative) (Section 1.4, 1.6, 2.2)
5: Design cost effective and predictable regulation	The rule is not cost effective BOEM does not consider all cost, distributive, or equity impacts BOEM acknowledges considerable uncertainty in regulatory design and impacts (Section 1.4-1.9, 2.3)
6: Benefits must exceed costs	By BOEM's own calculation, the costs exceed the benefits (Section 2.4)
7: Base decisions on best available science and economics	BOEM does not use best available science to determine necessity of rule BOEM does not use best available economics to determine consequences of rule Science is still under review (Section 1.2-1.5, 2.5)
10: Avoid duplicative regulations	Regulation of support vessels is duplicative of MARPOL regulations Duplicates existing successful regulations (Section 2.6)

3 Technical Analysis of Cost Estimates

Throughout the IRIA, BOEM requested industry estimates of compliance costs. The costs set forth below were developed by a survey conducted by RE of industry representatives. Note that not all compliance costs are represented in this section, primarily those where RE has calculated costs that differ from BOEM.

BOEM provides their estimated industry compliance costs in Table 15 of the IRIA. The estimates presented in this section refer to and can be compared to costs included in Table 15 (unless otherwise noted) and were developed by RE based on past industry experience. In cases where ranges have been identified for cost estimates, the lower end of the cost range is used in the calculations, providing a conservative cost estimate. A summary and comparison of the IRIA estimates and RE estimates is presented in Table 3.1 below.

Regulation Change	BOEM		Ramboll Environ	
	Year 1 Cost	10-Year Cost (3%)	Year 1 Cost	10-Year Cost (3%)
550 Subpart B				
Contents of Exploration Plans	\$260,400	\$2,714,231	\$2,728,000	\$23,270,393
Contents of DPP and DOCD	\$444,154	\$4,402,546	\$5,766,000	\$49,185,150
Total Subpart B	\$704,554	\$7,116,777	\$8,494,000	\$72,455,543
550 Subpart C				
Air Quality Analyses in Plans	\$1,721,624	\$76,999,522	\$14,848,700	\$112,075,776
Emission Reduction Measures	\$17,290,668	\$139,946,251	\$66,143,391	\$600,498,895
Monitoring & Reporting	\$3,161,244	\$65,248,849	\$439,556,749	\$2,633,021,132
General	\$1,240	\$10,577	\$1,240	\$10,577
Total Subpart C	\$22,174,776	\$282,205,199	\$520,550,080	\$3,345,606,381
550 Subpart J				
Collect, maintain & submit all air quality records	\$62,496	\$533,104	\$62,496	\$533,104
TOTAL	\$22,941,826	\$289,855,080	\$529,106,576	\$3,418,595,027

²² Note that costs in Table 3.1 have been aggregated for easier comparison with BOEM's Table 15 in the IRIA. The subsequent tables below (Table 3.2 through Table 3.25) show direct comparison of costs within the disaggregated category, so the totals do not match-up with Table 3.1. For example, under "Contents of Exploration Plans" cost category, we only compare the cost estimates for "Collect, maintain & submit all air quality & modeling documentation."

3.1 Air Quality Modeling and Analyses Costs

There are several sources of air dispersion modeling costs recognized by BOEM. These are costs for collecting, maintaining and submitting modeling documentation; for submitting expanded air emissions and compliance data for Exploration Plans (EPs), Development and Production Plans (DPPs), and Development Operations Coordination Documents (DOCDs) above the emission exemption threshold (EET); and for air quality analyses in plans. Each is described below citing the estimates developed by BOEM and RE.

3.1.1 Collecting, Maintaining, and Submitting Air Quality and Modeling Documentation

For the exploration plans, BOEM estimates that the collection, maintenance, and submittal of all air quality and modeling documentation will result in 2,200 annual burden hours, or 20 hours for 110 changed plans. Note that while BOEM estimates the annual number of changed plans as 110, it is possible that the number of plan re-submittals will increase significantly due to new proposed rule section 550.280(a) that prohibits use or substitution of any emission source that is not identified in the plan. Based on historical industry experience, we estimate that the hour burden is 100-200 per plan, resulting in 11,000 to 22,000 annual burden hours. This is an estimate of the burden to collect the considerable amount of data for each emission source, estimate emissions, prepare plans, and identify the maximum projected emissions for each criteria and major air pollutant by calculating the annual rate, maximum 12-month rolling sum, and the maximum peak hourly rate as required by proposed rule section 550.205(e). This estimate does not include modeling analyses and ERM/BACT evaluations. For consistency, throughout this analysis we utilize the same hourly cost used by BOEM of \$124 per hour. Based on industry experience, which has informed our calculations, assuming 110 changed plans, each with an hour burden of 100-200 hours annually, the additional hour burden will result in a 10 year cost of \$13.6 million. This equates to a net present value (NPV) cost of \$11.6 million when discounted at three percent. By comparison, BOEM estimated a 10 year cost of or NPV cost of \$2.2 million (see Table 3.2), which is significantly underestimated.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Contents of EPs	110	\$198,400	\$2,185,358
RE	Contents of EPs	110	\$1,364,000	\$11,635,197

For DPP and DOCD, BOEM estimates that the collection, maintenance, and submittal of all air quality and modeling documentation will result in 3,100 annual burden hours, or 20 hours for 155 changed plans. While we agree that approximately 155 plans will need to be updated, based on industry experience, we estimate that the hour burden is 200-400 per plan, resulting in 31,000 to 62,000 annual burden hours. This is an estimate of the burden to collect the considerable amount of data for each emission source, estimate emissions, and prepare the air quality portion of the plans. This estimate does not include modeling analyses and ERM/BACT evaluations, but does include burdens for collecting emissions information from installation

vessels and additional hours for determining if consolidation of facilities is required. Based on historical industry experience, the additional hour burden will result in a 10 year cost of \$38.4 million (\$32.8 million NPV). BOEM's estimate of a 10 year cost of \$3.6 million (\$3.1 million NPV) is therefore inaccurate (see Table 3.3).

Table 3.3 - Collect, Maintain, and Submit Air Quality and Modeling Documentation				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Contents of DPP and DOCD	155	\$289,154	\$3,080,364
RE	Contents of DPP and DOCD	155	\$3,844,000	\$32,790,100

3.1.2 Submitting Expanded Air Emissions and Compliance Data for EPs with Air Emissions Above Exemption

For the EPs, BOEM estimates that only 20 plans will be subject to submitting expanded air emissions and compliance data. It is uncertain if the proposed requirements will increase the number of plans that exceed EETs because new EETs will not be completed until 2020. The change in accounting for Mobile Support Craft (MSC) emissions will increase facility totals, and consolidating facilities will likely cause more plans to exceed thresholds. Therefore, the number of plans affected may be closer to the estimated total number of plans (110, as estimated by BOEM). It is possible that a greater number of resubmittals will be required due to new proposed rule section 550.280(a), which prohibits use or substitution of any emissions source not identified in the plan. Furthermore, there is an additional burden required for a plan that exceeds EETs (i.e. over and above a “base plan” that does not exceed thresholds), resulting in an hour burden of 100 hours per plan, not the 25 hours estimated by BOEM. This increases the annual burden hours from the 500 (estimated by BOEM) to 11,000. Due to these increases, BOEM's 10-year cost estimate of \$620,000 (\$528,873 NPV) is actually closer to \$11.6 million NPV (see Table 3.4). Also, this estimate does not take into account the unclear regulatory framework. Under the current regulatory framework, operators may self-mitigate their air emissions such that the plan emissions remain under the EET. It is not clear if the proposed rule will allow such self-mitigation and as such, more plans may exceed the EET and would require additional analysis (e.g., modeling, ERM, etc.).

Table 3.4 - Submitting Expanded Data for Plans Above Exemption				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Exploration Plans	20	\$62,000	\$528,873
RE	Exploration Plans	110	\$1,364,000	\$11,635,197

For DPPs and DOCDs, BOEM estimates that only 50 plans will be subject to submitting expanded air emissions and compliance data. It is uncertain if the proposed requirements will increase the number of plans that exceed EETs because new EETs will not be completed until 2020. The change in accounting for MSC emissions will increase facility totals, and consolidating facilities will likely cause more plans to exceed thresholds. Therefore, the number of plans affected may be closer to the estimated total number of plans (155, as estimated by BOEM). Furthermore, there is an additional burden required for a plan that exceeds EETs (i.e. over and above a “base plan” that does not exceed thresholds), resulting in an hour burden of 100 hours per plan, not the 25 estimated by BOEM. This increases the annual burden hours from the 1,250 (estimated by BOEM) to 15,500. Due to these increases, BOEM’s 10-year cost estimate of \$1.5 (\$1.3 million NPV) is actually closer to \$16.4 million NPV (see Table 2.4).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	DPPs and DOCDs	50	\$155,000	\$1,322,181
RE	DPPs and DOCDs	155	\$1,922,000	\$16,395,050

3.1.3 Air Quality Analyses in Plans

BOEM estimates that across all reporting and recordkeeping requirements only 406 new plans and consolidations of existing plans will need to be submitted to meet the air quality analysis requirements in the proposed rule. This encompasses:

- conducting the required analysis and modelling for expanded air emissions and for those criteria and major precursor air pollutants that exceed the threshold and compliance requirements;
- submitting modelling reports;
- reporting/consolidating emissions data from multiple facilities if required;
- submitting revised air emissions plans, as required;
- requesting exceptions and obtaining approvals;
- providing additional information and analysis as required for plan approval;
- obtaining approval of all modelling protocols and meteorological data sets; and
- providing BOEM with copies of and access to protocols and all required information.

We believe that as a result of these requirements, two to three times as many responses as estimated by BOEM will be required, roughly 924 -1,272 in total. This is for multiple reasons outlined below.

The IRIA estimates up to 110 EPs and 235 DOCDs (a total of 345 plans) will receive annual air quality reviews, and therefore require modeling analysis for air pollutants over the analysis period. We believe 50-100% of these plans will require modeling analysis, not just 87 of them, due to the change in accounting for MSC emissions effectively increasing facility totals, the requirements for consolidating, and the uncertainty of changing EETs, which collectively will

likely cause more plans to exceed thresholds. The range of hours is wide (increased to 80-200 hours per plan, from a BOEM estimate of 38 hours per plan) because it is unreasonable to assume that 38 hours is sufficient to manage the air quality modeling and gather all input data from relevant vessels. There is uncertainty in the mechanisms to prepare modeling (changing dispersion models), new modeling requirements (AAI modeling), and changing compliance points (receptors in non-attainment areas and on the State seaward boundary), which leads to the large estimated range in hour burden per plan.

In addition to the hour burden on operators to collect data, there is an additional cost for third party consultants to perform the modeling work. For additional plans that will now require modeling and analysis under the proposed rule, this could cost an additional \$20,000 to \$100,000 per plan, resulting in an additional cost burden of \$14.5 million NPV (see Table 3.6). These costs differ slightly from the IC Burden estimate contained in previously submitted comments by the American Petroleum Institute (API)²³ and the Offshore Operators Committee (OOC)²⁴ in that the previous IC Burden comments included a \$10,000 cost estimate for incremental modelling/analysis for the full amount of plans (171-345). It was determined that \$10,000 amount was already included for those 171-345 plans in the \$20,000 to \$100,000 cost range for additional plans requiring modelling / analysis. The double counting error due to the uncertainty of how many of the total plans would be included in which category has been corrected.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Conduct Analysis and Modeling	87	\$409,944	\$3,496,905
RE	Conduct Analysis and Modeling	171	\$1,696,320	\$14,469,954

BOEM estimates that reporting and consolidating air emissions data from multiple facilities will only require 15 consolidations. We estimate that roughly 282, or 80% of DOCDs and 50% of EPs will require consolidation, again due to the change in accounting for MSC emissions effectively increasing facility totals, the requirements for consolidating facilities, and the uncertainty of changing EETs, collectively will likely cause more plans to exceed thresholds, which, in turn, will increase the number of plans that will require consolidation. Furthermore, the proposed rule requires that plans be recertified every ten years, such that the existing facility would have to reassess total complex emissions considering attributed emissions from MSCs and emissions from other facilities if consolidation is required. This again increases the likelihood of exceeding the EET. Consolidating plans could result in an additional cost of \$6 million NPV (see Table 3.7).

²³ <https://www.regulations.gov/document?D=BOEM-2013-0081-0042>

²⁴ <https://www.regulations.gov/document?D=BOEM-2013-0081-0041>

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Consolidations	15	\$37,200	\$317,324
RE	Consolidations	282	\$699,360	\$5,965,683

We agree with BOEM that it will be 20 hours per consolidation. We stress that this 20 hours does not include any additional modeling, ERM/BACT evaluations, or plan resubmissions that may be required a consolidation of plans that results in an exceedance of an EET. Additionally, BOEM underestimates the significant cost for air emissions consultants to prepare modeling protocols. For these reasons, we reiterate that the 20 hours burden does not encompass all the requirements that may be necessitated by the proposed rule.

Additional information may be required to be submitted for a plan to be approved. This could result in added cost, estimated by BOEM to be \$3.2 million NPV. We agree with BOEM estimates for this calculation (see Table 3.8)

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Additional approval information	300	\$372,000	\$3,173,235
RE	Provide Additional Info	300	\$372,000	\$3,173,235

While BOEM assumes only 4 submissions will require approval of all modeling protocols and meteorological data sets, industry experience indicates that the number of submissions that will require full approval will be from 171 to 345. This aligns with the estimated number of plans that may potentially require modeling under the proposed new requirements. We agree with BOEM that it will take 5 hours for operators to review modeling protocols, but there is an additional \$5,000 to \$20,000 cost per plan for a consultant to prepare the protocols. The increase in number of submissions, and additional third party cost for developing the protocols, results in an additional 855-1,725 hours of burden to the operator, and an additional \$947,023 (NPV) worth of external cost for developing the modeling protocols (see Table 3.9).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Protocol approval submittals	4	\$2,480	\$21,155
RE	Protocol approval submittals	171	\$111,020	\$947,023

In total, this increases the 10-year cost for air quality analyses in plans to \$112 million NPV as compared to BOEM's estimate of \$77 million NPV. (See Table 3.1).

3.1.4 Additional Modeling Costs

On page 19 of the IRIA, BOEM states, "If modeling shows projected emissions at 95% or more of a SIL, operators must remodel following any emission reduction measures or addition of aircraft emissions and applicable emissions from onshore support facilities". This iterative modeling process could imply additional modeling costs that are not considered.

On page 23 of the IRIA, BOEM states,

[The] modelling of MSC emissions may require multiple model runs with MSCs modelled in different possible locations to identify the worst-case impact on the receptor points.

This procedure is imprecise and could result in uncertain costs.

3.2 Cost of Photochemical Grid Modeling

The number of instances where photochemical modeling may be required will likely be driven by exceedances of NO_x and VOC thresholds, which are considered ozone precursors. Although it is difficult to estimate how many NO_x or VOC exceedances will occur, an assigned value of "0 instances" is clearly inappropriate. Due to the significant changes in the proposed rule, exceedances of NO_x and VOC thresholds will increase and may impact 50-100% of all plans. The range of impacted plans is large due to uncertainty in the proposed rule. In addition, photochemical modeling costs could range from \$40,000 to \$80,000 per analysis, based on industry modeling expert analysis²⁵. Assuming 50-100% of plans are impacted, this results in an

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Photochemical Grid Modeling	0	\$0	\$57,015,915
RE	Photochemical Grid Modeling	171	\$6,840,000	\$58,346,587

additional cost of up to \$58 million NPV (see Table 3.10).

²⁵ RE expert provided the estimate based on industry experience.

3.3 Emissions Credits Costs

An analysis of NO_x emission credit markets and costs is completed in Section 1.5, and is summarized here.

While BOEM assumes a NO_x emission credit price of \$3,000 per ton in the IRIA, this price is not reflective of existing NO_x emission credit markets. In Louisiana non-attainment areas, NO_x emission credits range from \$18,000 – \$25,000 per ton. In Texas non-attainment areas, NO_x emission credits cost \$53,000 to \$65,000 per ton, and NO_x emission credits that can be used for VOC attainment cost \$90,000 to \$125,000 per ton.

No markets for SO_x emissions currently exist in Louisiana or Texas and the costs of establishing a new market can be significant and have not been studied by BOEM. And there are currently no markets for PM_{2.5} emissions in any state. Furthermore, BOEM has not studied the impact of this proposed rule on existing NO_x emission credit markets and other market participants.

3.3.1 Requesting VOCs or NO_x Waiver for ERM

BOEM assumes that only one request for VOCs or NO_x waivers will be filed annually. The requirements for VOC and NO_x waivers described in the proposed rule are vague and unclear. Based on the proposed rule text, it is impossible to estimate the associated burden, so we use BOEM's estimate for this calculation (see Table 3.11).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Request Waivers	1	\$124	\$1,058
RE	Request Waivers	1	\$124	\$1,058

3.3.2 Notify BOEM if ERM are Disabled or Unavailable

BOEM assumes that there will be 2 notifications annually. It is extremely difficult to estimate the number of times an ERM may become disabled. The proposed rule will likely significantly increase the number of ERMs required and operators will establish compliance programs to ensure they are implemented and maintained. Yet, the reliability of ERMs is unknown for offshore operations (where conditions are harsher than onshore and space is extremely constrained for spare parts, support personnel, etc.). The proposed rule does little to clarify the consequences of exceeding a 90-day extension and it is unclear what the cost implications of this notification will be. For completeness we use BOEM's estimate for this calculation (see Table 3.12).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	BOEM Notifications	2	\$496	\$4,231
RE	BOEM Notifications	2	\$496	\$4,231

3.3.3 Notify Appropriate State Air Quality Control Jurisdiction of Proposal to Require Emission Offsets. Revise SIP to Include New Information

BOEM estimates that there will be one notification with one hour of burden. We believe that the annual burden hours are 2 to 4 hours, since a qualitative analysis will be required to justify why a previously submitted plan should be approved according to the old standard (see Table 3.13).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	State Notifications	1	\$124	\$1,058
RE	State Notifications	1	\$248	\$2,115

Note that this does not reflect the complexity of emissions offset markets. As described further in Section 1.5, the use of emissions offsets is a highly complex process that involves requirements well beyond a notification to a State air quality control body. The mechanisms for obtaining and using emissions offsets are vague and unclear in the proposed rule, raising numerous questions on the associated impact.

3.3.4 Request a Departure from Compliance with the New or Revised Ambient Air Quality Standards and Benchmarks (AAQSB)

BOEM estimates that 2 requests will be filed annually with an annual hour burden of 2 hours per plan. We think that it is more likely that 10 plans will be filed annually with an annual hour burden of 20 to 200 hours per plan, but this estimate is highly dependent on how often the AAQSB are revised and the scope of any future revisions. This could increase the 10 year cost from \$4,231 NPV (assumed by BOEM) to RE's estimate of \$211,549 (see Table 3.14). In addition, the number of affected plans will depend on the timing of any future AAQSB revisions, which is difficult to predict and plan for in advance.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Request Departures	2	\$496	\$4,231
RE	Request Departures	10	\$24,800	\$211,549

3.4 Cost to Add SCR for Gulf of Mexico (GOM)

BOEM estimates that documenting results of ERM analysis will require 50 hours per submission and that there will be 12 submissions per year. ERM and BACT analysis are highly case-by-case specific. 50 hours represents a reasonable burden estimate for a relatively simple case; however, more complex cases (e.g. for consolidated facilities) likely will require more complex and time-consuming analysis, potentially up to 500 hours per plan. In addition, revised

estimates are aligned with the number of plans that may potentially require ERM and BACT review under the proposed new requirements (50-100% of the total number of plans). This hourly burden is estimated to equate to a cost burden of \$10,000-\$75,000 per ERM and BACT evaluation because it is expected that third-party consultants will be utilized to conduct such analyses. This could increase BOEM's 10-year cost for documenting results of ERM analysis from \$25.6 million (\$21.4 million NPV) to \$128.3 million (\$109.4 million NPV) (Table 3.15).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Submissions	12	\$1,400,000	\$21,436,378
RE	Submissions	171	\$12,825,000	\$109,399,851

There are four primary concerns about the selective catalytic reduction (SCR) BACT cost calculations BOEM provides in the IRIA. These concerns include 1) assuming SCR would be the only type of BACT required, 2) the underestimation of assumed capital costs of applying SCR to vessel engines for each of the three vessel types for which BACT may be required (drillships, semisubmersibles, and jackups), 3) the inconsistencies in BOEM's calculations of SCR day rate increases for all three vessel types, and 4) excluding in the cost estimations the potential need to include ERM for production platforms.

First, BOEM included the cost of implementing SCR as the only BACT option, stating that NO_x is the most likely pollutant to require reductions under the proposed rule. If other pollutants trigger BACT, different types of controls would be required. For example, although there is no official SIL for PM_{2.5} at present, the NAAQS is very stringent and the SIL (when established) is likely to also be very stringent. Therefore, as the costs to apply the required BACT for other pollutants have not been considered in BOEM's analysis, the cost to add BACT may be underestimated.

Second, the SCR capital costs that BOEM did include in the analysis are not necessarily representative for the types of vessels for which BACT may be required. For example, although BOEM provided three example capital costs of applying SCR to drillship engines, all of which were greater than \$30,000 per day as a day rate premium per drillship (ranging between \$32,900 and \$37,500 in 2013 or 2014 dollars), it assumed a lower cost of \$30,000 per day (in 2015 dollars) as the representative cost. This underestimates the true cost of the proposed rule for each drillship requiring SCR, as well as the full fleet of drillships (assumed to include 30 in the GOM) by a large degree.

For semisubmersibles and for jackup rigs, BOEM developed the cost premium by using a slightly lower percentage increase than for drillships due to less complicated installation of SCR units on these vessels. These estimates seem to be arbitrary, and offer a poor justification for the costs estimates provided. Based on industry experience installing and operating SCR controls, more representative costs for SCR installation by rig type (converted to day rate

premiums for comparison to BOEM’s estimates by dividing the total of the annualized capital costs plus annual operation costs by 365) are reflected in Table 3.16 below.

Rig Type	RE Day Rate Premium	MODUs	GOM Cost Per Day
Jackup	\$6,083	10	\$60,826
Semisubmersible	\$21,289	10	\$212,890
Drillship	\$39,537	30	\$1,186,100
Total			\$1,459,816

Third, the costs shown in Table 8 of the IRIA and stated to be the “relevant costs used in the analysis” are not consistent with the process BOEM states it used. Table 8 as it appears in the IRIA is shown below:

Cost Category	Cost
Jackup Unloaded Day Rate	\$150,000
Semisubmersible Unloaded Day Rate	\$470,000
Drillship Unloaded Day Rate	\$550,000
BACT Jackup Day Rate Cost Increase (%)	2.5%
BACT Semisubmersible Day Rate Cost Increase (%)	1.9%
BACT Drillship Day Rate Cost Increase (%)	2.7%
BACT Jackup SCR Day Rate Cost Increase (\$)	\$7,500
BACT Semisubmersible SCR Day Rate Cost Increase (\$)	\$20,000
BACT Drillship SCR Day Rate Cost Increase (\$)	\$30,000

However, when attempting to calculate the day rate cost increase for each of the three types of vessels (Jackup, Semisubmersible, and Drillship) using the figures in Table 8, the calculations do not provide the results shown in Table 8, as shown in the following equations:

- 1) BACT Jackup SCR Day Rate Cost Increase (\$) = Jackup Unloaded Day Rate * BACT Jackup Day Rate Cost Increase (%), but
 $\$7,500 \neq \$150,000 * 2.5\%$; $\$3,750 = \$150,000 * 2.5\%$ OR $\$7,500 = \$150,000 * 5.0\%$
- 2) BACT Semisubmersible SCR Day Rate Cost Increase (\$) = Semisubmersible Unloaded Day Rate * BACT Semisubmersible Day Rate Cost Increase (%), but

$\$20,000 \neq \$470,000 * 1.9\%$; $\$8,930 = \$470,000 * 1.9\%$ OR $\$20,000 = \$470,000 * 4.3\%$

- 3) BACT Drillship SCR Day Rate Cost Increase (\$) = Drillship Unloaded Day Rate * BACT Drillship Day Rate Cost Increase (%), but $\$30,000 \neq \$550,000 * 2.7\%$; $\$14,850 = \$550,000 * 2.7\%$ OR $\$30,000 = \$550,000 * 5.5\%$

These apparent inconsistencies need to be addressed and corrected, or documented by BOEM.

Finally, the IRIA states on page 27, “BOEM’s analysis of operator submitted plans indicates that MODU drilling is the primary activity causing plan’s emissions to exceed the emission threshold. Therefore, the analysis of required ERM is closely related to the expected drilling activity.” However, considering that MODU drilling will many times be consolidated with a production platform, it would seem that the production facility may also be subject to ERMs and/or BACT. Therefore, the analysis included in the IRIA is incomplete and BOEM’s supposition that MODUs are the only impacted activity is not realistic, resulting in an underestimation of costs associated with the proposed rule. BOEM only included the purchase of emission credits in its cost analysis, resulting in a 10-year NPV of \$117.2 million. RE included SCR costs as the most likely alternative (BACT), which have a 10-year NPV of \$397.7 million (Table 3.18).

Table 3.18 - Cost of ERM / BACT for Gulf of Mexico (GOM)				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Emissions Credits purchased	5,294	\$15,880,500	\$117,150,543
RE	SCR Systems Installed	5	\$43,293,015	\$397,744,212

3.5 Cost to Install and Operate PEMS

BOEM estimates that there will be 12 submissions required to demonstrate actual emissions data or other information to verify compliance with a previous approved plan, each requiring 16 hours. However, based on historical industry experience, the hours required to report actual emissions data is estimated as two hours per month or 24 hours annually. The number of potentially affected facilities is estimated to be 858 to 1,143 facilities annually over the first three years. This estimate is based upon the number of platforms in the Gulf of Mexico (2,480) plus the estimated number of MODUs (50) plus the estimated number of vessels (900). RE assumes that all required compliance demonstrations would be required within the first 3 years after the rule is finalized. Under the proposed rule, potentially 75-100% of those total facilities could require some type of compliance demonstration. Therefore, the 10-year NPV for reporting actual emissions data is not \$4.4 million as estimated by BOEM, but at least \$21.8 million, based on the lower end of the range (858) (Table 3.19).

Table 3.19 - Report Actual Emissions Data				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	reports submitted	12	\$126,159	\$4,445,190
RE	reports submitted	858	\$2,553,408	\$21,781,088

BOEM assumes that only non-certified engines on vessels would require PEMS, and assumes there are 682 GOM vessels. As such, on average three (3) engines per year may require PEMS (page 52), or 30 total engines over the 10-year analysis. BOEM further states that there is uncertainty in that number but that it believes the number is very small. BOEM estimates an annual hour burden of 36 hours per engine. We estimate the hours required to install and operate a PEMS are more likely 80-100 hours for engineering and installation and an additional 1 hour per day per system for operation and maintenance, resulting in 445-465 hours per year for each system installed. Based on current industry estimates of 2,480 platforms, 50 MODUs, and 900 vessels, and 75-100% of facilities potentially requiring a PEMS, the estimated number of total PEMS installations ranges from 2,573-3,430 over the analysis period. The annual Offshore Marine Service Association member vessel census (which excludes nonmembers vessels) is typically around 800 - 900 vessels. Therefore, the BOEM estimate of 682 is too low. RE believes 900 GOM vessels is a reasonable estimate. Our cost estimate is based on the number of facilities rather than number of impacted engines because multiple engines on a single facility could be monitored with a single PEMS. However, in some cases individual engines may require a dedicated PEMS, resulting in estimates that would be potentially higher than what is included in our cost estimate. The analysis provided herein assumes the lower value of 858 PEMS systems installations per year for the first three years, as a conservative estimate, and that all required PEMS systems would be installed within the first three years after the rule is finalized. BOEM provides an estimate for PEMS installation costs ranging between \$100,000 and \$156,250 per system, with annual operating costs of \$3,750. This estimate is lower than historical industry experience indicates. BOEM developed its estimate by dividing the total cost of a PEMS by the number of engines it monitors to calculate a cost per engine. RE developed a per system estimate. The largest cost of a PEMS is the system itself and its installation. As the number of engines is added to the system the cost per engine will go down. BOEM made an error in their estimate on a per engine basis since cost and engine are not a linear relationship. The cost estimate should be calculated per facility and system.

Table 3.20 - Install and Operate a PEMS				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Engines (systems installed)	3	\$78,000	\$3,497,441
RE	Facilities (systems installed)	858	\$222,993,333	\$785,691,267

We believe a more accurate estimate for PEMS capital cost is \$250,000 to \$750,000, based on actual historical industry installation costs²⁶. All PEMS systems are assumed to be installed within the first three years, and maintenance and calibration costs are expected to be approximately \$10,000 per system annually for each of the 10 years included in the analysis. This results in a 10-year NPV of \$785.7 million, compared to the low estimate provided by BOEM of \$3.5 million (Table 3.20) An additional concern is whether the PEMS and stack testing industry have the capacity to manufacture, install, and test so many systems within such a short timeframe. Even if it does, it will not be a seamless process and it could be costly, the extent of which has not been evaluated by BOEM.

While RE's cost estimates are highly variable and each facility will differ based on the size of the system, the number of engines being monitored, facility space and weight constraints, as well as a number of additional variables, we believe these estimates are considerably more accurate than those posited by BOEM.

It should also be noted that BOEM states,

While the monitoring of actual emissions is likely to be more accurate than calculating emissions through emissions factors and fuel consumption, BOEM does not have a basis at this time to estimate the accuracy improvement for CEMS and PEMS compared to the current standard practice,

IRIA, page 51

and

BOEM does not expect that emissions would be reduced by any material amount through monitoring of actual emissions (with PEMS) versus estimating plan emissions with emissions factors and fuel/activity information provided under § 550.312

IRIA, page 71.

These statements appear to support **not** requiring PEMS. These statements need to be reconciled with the elements of the proposed rule which are unclear as to the specific monitoring required by the rule.

3.6 Costs to Monitor/report Fuel Usage and Activity Data in GOM

BOEM estimates that retaining monthly fuel information for each source on a determined schedule for 10 years will result in 48 hours of burden per facility per year, with 265 responses required annually resulting in an annual burden of 12,720 hours. Based on this, the first year cost is estimated at over \$1.1 million dollars, amounting to the 10-year NPV of more than \$40.0 million (Table 2.20).

Forty-eight hours is a reasonable burden estimate if fuel usage is tracked at the facility level (total fuel consumed). However, the proposed rule language seems to indicate that fuel tracking will be required for each engine or other emission source. Under this scenario, a more

²⁶ Provided by OCS operators and vendors through a survey conducted by RE.

appropriate estimate would be 300 to 600 hours for fuel tracking, resulting in an annual burden of 257,400 to 685,800 hours. The number of potentially affected facilities is the same as the estimated number of PEMS. As presented previously, RE estimates 858 to 1,143 facilities annually would require PEMS, which is based on our current GOM estimate of up to 2,480 platforms, 50 MODUs, and 900 vessels.

The analysis provided herein assumes the lower value of 858 facilities per year for the first three years. However, this is a conservative estimate since some facilities will have multiple engines. An estimate of the total number of engines in the GOM would require significantly more time to estimate than the comment period made available. Based on the conservative estimate of 300 hours in 858 facilities, and using BOEM’s hourly rate of \$124, the cost of retaining monthly fuel information for each source is estimated at \$31,917,600 for the first year (Table 3.21). Therefore, the 10-year NPV for retaining this monthly fuel information for each source for 10 years is not \$40.0 million as estimated by BOEM, but about \$272.3 million, based on the low end of the range (858) (Table 3.21).

Table 3.21 - Costs to Monitor/Report Fuel Usage and Activity Data				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Retain monthly fuel information	265	\$1,135,430	\$40,006,709
RE	Retain monthly fuel information	858	\$31,917,600	\$272,263,602

Based on BOEM’s estimates, the submittal of fuel logs or collection of facility and equipment usage information for MSCs will result in eight hours of burden per year, with 80 responses required annually, resulting in an annual burden of 640 hours. The first year cost of this is estimated at \$63,079 dollars, amounting to the 10-year NPV of about \$2.3 million (Table 3.22). These estimates are unrealistic. We estimate this burden to be 20 to 200 hours annually per vessel. The low end of the range of is based on monitoring total fuel consumption per vessel, while the high end of the range is based on monitoring fuel for each engine on each vessel. There could be 20 engines on one vessel, so the level of effort is much higher than BOEM estimates. MSCs also service multiple platforms so the apportionment of service for different facilities needs to be factored in which will takes additional time and effort. Given the low range estimate of the annual burden, the estimated number of vessels, and BOEM’s hourly rate of \$124, we estimate the cost of submittal of fuel logs or collection of facility and equipment usage information for MSCs at \$2,232,000 for the first year (Table 3.22). Therefore, the 10-year NPV for this requirement is not \$2.3 million as estimated by BOEM, but over \$19.0 million (Table 3.22).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Submittals	80	\$63,079	\$2,298,499
RE	Submittals	900	\$2,232,000	\$19,039,413

Most individual engines are not equipped to monitor individual fuel usage. In order to accomplish this, individual engine fuel meters will need to be installed on each engine. According to RE’s research, the estimated capital costs to install a fuel flow monitor and data logger system could range from \$10,000 to \$15,000 per engine. Offshore Service Vessels (“OSV”, which are MSCs) have at least two to as many as five main engines plus at least two generator engines. Based on data provided in Table 20 of the IRIA, there are close to 2,200 engines onboard OSVs utilized in the GOM. If fuel meters were installed on each engine onboard the fleet of OSVs servicing the GOM, the additional capital costs could be \$22,000,000 to \$33,000,000 greater than the cost outlined in Appendix A of the IRIA. This also does not include the costs to install fuel meters on the MODUs and Platform engines, which include an additional 4,500 engines as estimated in Tables 21 and 22 of the IRIA. Assuming the same estimated capital costs for installing fuel meters on OSVs, the total costs to install fuel meters on all MODUs, Platform, and OSV engines (6,750) could be an additional \$67,500,000 to \$101,250,000 over 10 years in nominal terms. Using a conservative estimate of capital costs to install a fuel flow monitor and data logger system of \$10,000 per engine, and assuming that these are installed on one-tenth of the total 6,750 engines in the first year, the cost for the first year is estimated at about \$6.8 million (Table 3.23). This amounts to the 10-year NPV of approximately \$57.6 million using a three percent discount rate.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Did not estimate	0	\$0	\$0
RE	Fuel flow meter installations	6,750	\$6,750,000	\$57,578,869

In addition to the equipment required to monitor fuel usage on each engine, Section 312(b) of the proposed rule requires the collection of hours of operation at each percent of capacity for each emission source, as well as other non-specified data for sources that would not otherwise be accounted for by fuel consumption logs. Due to the limited time available to prepare these comments, cost data for this equipment could not be collected; however, RE estimates that the actual costs could be significant. For example, for one newer vessel, according to industry experts it could cost approximately \$250,000 to install the software. There could be production losses as well.

3.6.1 Cost to Conduct Stack Testing

BOEM estimates that conducting stack testing and reporting stack testing results every three years will result in a 48-hour burden per test, with the 67 tests required resulting in an annual burden of 3,216 hours. The cost estimates provided by BOEM assume \$25,000 per stack test, resulting in a cost of \$1,675,000 annually for the estimated 67 stack tests. Based on this, the 10-year NPV for conducting stack testing and reporting results is about \$14.3 million using a three percent discount rate (Table 3.24).

BOEM underestimates these costs, and uses an unrealistic hourly burden to design, plan, conduct, and report each stack test. Also, BOEM's estimates do not take into account the fact that stack testing costs are not limited to the cost of the test operations alone. BOEM developed its estimate by dividing the total cost of a stack test by the number of engines. This is not an appropriate calculation since the cost of stack testing and engines is not a linear relationship. A significant cost component is the equipment and mobilization of the stack testing company. The cost estimates for stack testing should be based off of the number of facilities stack tested and then the number of engines tested at those facilities.

Stack test equipment and personnel will need to be mobilized leading to mobilization fees, and modifications to stacks and emissions sources may be required to enable stack testing to be performed, potentially resulting in additional costs. These modifications include installation of ports for testing, scaffolding and construction to access the stacks for port installation and testing and, in some cases, adding flume/lengths to stacks to allow testing. It is important to note that, practically speaking, stack testing will be a continuous process year to year given the extensive preparations (planning, test protocol development and approval, staff training of vendors, etc.), weather delays, disallowance of testing while drilling, etc. Many of these costs are not captured in BOEM's estimates.

RE estimates the hours required to design and plan one stack test at 80-120 hours, and actual stack tests are estimated to require 120-240 hours per test depending on the pollutants being tested and the number of engines included. Therefore, each stack test requires 200-360 hours.

The number of potentially affected facilities is the same as the number of PEMS that we estimate will be installed within the first three years following approval of the proposed rule, given that each PEMS will require a stack test at initial installation. RE estimates 858 to 1,143 facilities annually, which includes up to 2,480 platforms, 50 MODUs, and 900 vessels. It is assumed that all required PEMS systems would be installed within the first three years after the rule is finalized. Based on the number of facilities requiring stack testing and the number of hours needed to plan and conduct these, we estimate the annual burden at 171,600-411,480 hours. Using the conservative estimate of 200 hours required for each stack test, the lower value of 858 facilities per year for the first 3 three years, and the hourly rate of \$124, we estimate that conducting and reporting stack testing results every three years will cost \$21,278,400 in the first year (Table 3.24). Therefore, the 10-year NPV for conducting stack testing and reporting results is not \$14.3 million as estimated by BOEM, but over \$181.5 million, based on the low end of the range (858) (Table 3.24).

Source	Type of Actions	Number of Actions Yr. 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Testing and reporting results	67	\$1,675,000	\$14,288,090
RE	Testing and reporting results	858	\$21,278,400	\$181,509,068

As noted above, in addition to the hours required to design, plan, conduct, and report stack testing, there could be additional costs to mobilize engines and modify stacks and emissions sources to enable stack testing. A breakdown of estimated mobilization and modification costs are provided below:

- A. Modification of equipment to enable stack testing = \$15,000 per stack
- B. Mobilization Costs and One Engine test with 3 test runs per load and 3 engine loads (9 test runs per engine):
 - Gaseous Criteria Pollutants Only = \$120,000
 - Particulate Matter Additional Cost = \$25,000
- C. Each Additional Engine During the Same Mobilization:
 - Gaseous Criteria Pollutants Only = \$15,000
 - Particulate Matter Additional Cost = \$20,000

Based on these estimates, the cost for each engine to be tested is estimated at \$160,000 (\$145,000 for mobilization and testing, \$15,000 for modification of equipment to enable stack testing). Using the conservative estimate of 858 facilities tested per year, we estimate these costs at \$137,280,000 for the first year (Table 3.25). This differs from the previous estimate in IC Burden comments submitted by API and OOC. In those comments, we utilized the same number of facilities as estimated by BOEM and as were included in Tables 20, 21, and 22 of the IRIA. After further consideration, this updated cost includes our revised estimate of the number of facilities requiring stack testing (858 to 1,143). Based on this, the 10-year NPV for mobilization and modification costs associated with stack testing amounts to about \$1.2 billion using a three percent discount rate (Table 3.25).

Source	Type of Actions	Number of Actions Yr. 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Tests conducted / results reported	67	\$66,464	\$566,951
RE	Tests conducted / results reported	858	\$137,280,000	\$1,171,026,245

In addition, normal production operations may have to be curtailed or shut-in to execute the testing, which could result in deferred production, or unproductive rig time (these costs are not addressed here). For MODUs, safety requirements limit stack testing to those periods between well drilling programs, which do not occur often. If an operator is forced to delay MODU drilling to make time to test, the operator could incur idle rig time costs. These costs are equivalent to the rig day rate which have typically been more than \$100,000/day.

Another issue not addressed in the IRIA is the availability of stack test vendors. There are few such companies prepared to test or that have experience with offshore installations, and, given industry experience, many delays complicating the mobilization of personnel are possible (weather delays or drilling program changes during a well, etc.). It is likely the stack test vendor population is not large enough in the GOM vicinity to support this testing in the short three year window required by the proposed rule. There could be additional costs to get this type of support from outside of the GOM and these costs are not addressed.

As presented in this section, it is clear that BOEM's total estimated costs differ substantially from RE's cost estimates. BOEM clearly understated the costs and overestimated the benefits.

4 Technical Analysis of Benefit Estimates

The following sections discuss BOEM's benefits estimates from the IRIA. As discussed in Sections 1.2 and 2.1 of this report, it is unclear how BOEM's defined benefits justify the costs of this rule. The shortcomings of BOEM's benefit estimates are discussed below.

4.1 Failure to Assess and Adequately Calculate Benefits

BOEM estimates the benefits of offshore emission reductions through use of the Offshore Economic Cost Model (OECM). Data contained in the model results were used to estimate the benefits of the new regulation. However, the resolution of the OECM model results is very wide (e.g. the same \$5,000/ton value of impact is assumed within a band of more than 100 miles in terms of the distance to the shore). Hence it is difficult to see how the agency can justify moving the measurement boundary out from the coast to the state submerged boundary (a distance of a few miles). The model resolution is too coarse to determine whether an actual change in distance will genuinely provide adequate benefits, if any.

BOEM acknowledges the uncertainty involved in quantifying these benefits:

It is very difficult to estimate and monetize benefits for NO_x emissions reductions offshore because of the distance of OCS operations from onshore population centers.

IRIA page 44

BOEM needed to estimate the impacts to onshore residents from offshore sources. The Agency used data generated from APEEP which contains data for only onshore impacts. That is APEEP uses data from within the contiguous US only and has no offshore component. Uncertainties associated with the dose-response functions used from the APEEP model are not considered. The standard errors associated with each of these components are not taken into account and no sensitivity analysis is provided.

BOEM has essentially drawn observations from a population of onshore impacts only and is using two variables - distance and compass bearing location - to predict offshore impacts using a third order fitted polynomial equation. There is no theory supporting the model specification. The model needs to be calibrated against actual offshore data. Otherwise it is merely speculative and provides no basis for the rule.

4.2 Qualitative Benefits

Some of the benefits that BOEM has identified are unlikely to be realized and the value of these benefits is indeterminate. For example, BOEM believes that one of the benefits of the rule is the increased flexibility in meeting emissions reductions because of the ability to purchase emission credits. As discussed earlier in this document, it is unlikely that NO_x emission credits will be less expensive than BACT, greatly increasing the cost of the rule.

BOEM also claims a benefit of increased oil and gas development potential in the States, stating,

To the extent that OCS emissions do not impact the States (due to effective air quality management by BOEM), the States would have a greater ability to approve new or incremental oil and gas development over state submerged lands or onshore

IRIA, page 83.

This is at best a counterintuitive argument since it seems to indicate that reduced OCS impacts to onshore areas will allow for more emissions to occur nearer to onshore areas.

Other items that are listed on pages 82 and 83 of the IRIA are qualitative benefits that “may” result from the adoption of the proposed rule. There are seven categories, each with a list of potential benefits. Despite the length of this list of purported benefits, not one is identified as a benefit that **will** occur. Instead, the suggestion is that the volume of additional reporting, data collection, paperwork, and increased cost to industry and the agencies, will possibly result in a net benefit.

It is inappropriate to justify this rule on the basis of these purported qualitative benefits, particularly where BOEM acknowledges the costs exceed these benefits.

BOEM claims that:

There are numerous non-monetized, qualitative benefits attributable to the rule that would provide for more regulatory certainty and an overall cleaner environment²⁷.

IRIA, page 83

BOEM should not use unquantified benefits to justify a rule where the costs exceed the benefits. It appears that BOEM did not attempt to quantify most of the benefits they identified, leaving the question of whether these benefits are actually significant enough to justify the heavy costs imposed by the rule.

Further, it is unclear if many of the unquantified benefits identified by BOEM would actually lead to realized benefits. For example, BOEM claims that the rule

could result in the reduction of VOCs, SO_x, CO, and PM emissions, which have not been quantified”, but acknowledges that “Co-benefits, such as emissions reductions of other pollutant emissions associated with the proposed controls for NO_x, have not been evaluated or quantified in this analysis.

IRIA, page 5

Later in the IRIA, however, BOEM raises concern that the unquantified benefits may not occur as a result of the rule:

²⁷ Department of the Interior. Air Quality Control, Reporting, and Compliance Initial Regulatory Impact Analysis. RIN: 1010-AD82. March 3, 2016. Page 83.

Similar to engine performance management systems, BOEM is not estimating co-benefits for other pollutant reductions other than NO_x due to the uncertain nature of these reductions and the uncertainty about when these reductions could be credited to the proposed rule.

IRIA, page 80

This acknowledgement reinforces that the unquantified benefit of a reduction of criteria air pollutant concentrations cannot be used to justify the heavy costs of this rule, since BOEM acknowledges that the rule may not actually cause these reductions.

BOEM concludes that:

Based on a consideration of the qualitative as well as quantitative factors related to the rulemaking proposal, BOEM's assessment is that the proposed regulation is necessary to achieve compliance with the requirements of the OCSLA and that its adoption would provide a net benefit to the public. However, BOEM estimates the quantified net benefits from emissions reductions measures are exceeded by the cost of the emissions reduction measures and the increased modelling and monitoring costs.

IRIA, page 83

BOEM insists that the qualitative benefits in addition to the quantitative benefits provide a net positive benefit to the public. This is unreasonable and speculative, considering that many of the qualitative benefits result in increased costs and other claimed benefits cannot actually be attributed to the rule. Furthermore, BOEM has not demonstrated that there is a problem that needs to be resolved, making the “benefits” and costs of the rule unjustified.

**APPENDIX C: RESPONSES TO BOEM'S SPECIFIC REQUESTS
FOR COMMENT ON RULE PROVISIONS**

In the preamble, BOEM has specifically solicited comments on approximately forty issues in the proposed rule that have not been fully developed or concretely proposed. Many of the issues that are undeveloped would be critical components of any final air quality regulatory program, and may have significant impact to offshore operators. Without fully developed proposals on these issues, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. Constructive feedback on many, if not most, of these requests involves detailed technical review and significant information gathering. Due to the compressed comment period, we were not afforded enough time to give these requests the full consideration and/or the technical analysis they warrant.

81 Federal Register	BOEM Request for Comment	Response and Comment Reference
Pg. 19724	BOEM requests comments and data on the extent of BC emissions from OCS-related operations and potential means of reducing such emissions and their negative effects. BOEM also requests comment on other factors, information, or data that BOEM should consider in its analysis of BC, either in connection with or in addition to its air quality regulatory analysis.	As discussed in Section 12.7, because black carbon is not related to compliance with the NAAQS, BOEM lacks the authority to regulate it.
Pg. 19731	BOEM would like comments on the appropriateness of potentially distinct emissions thresholds or threshold formulas for Alaska and GOM, and/or how these thresholds should be structured.	As discussed in sections 2.4 and 6.1, consistent with our overall position on revising EETs, BOEM should delay this decision until the scientific bases for EETs have been established. Until then, we have no basis for making a decision on this important issue. That said, we anticipate that different EETs will be appropriate for Alaska and the GOM.
Pg. 19731	The USEPA recently established new one-hour NAAQS for NO ₂ , and SO ₂ , as well as changes to the 8-hour O ₃ and annual PM _{2.5} NAAQS, and also given that the USEPA has recommended an interim SIL for one-hour NO ₂ at 8mg/ m ³ 30 and an interim SIL for one-hour SO ₂ at 3 parts per billion, ³¹ but has not proposed to add these SILs (or any SILs for PM _{2.5} or ozone) to 40 CFR 51.165(b)(2), comments are solicited on how these new ambient standards and SILs that have the status of only being USEPA recommendations should be implemented in the context of the new studies, for the purpose of updating the new EETs that result.	As discussed in more detail in Section 9.1, BOEM should adopt its own SILs once the scientific studies are complete. In Section 9.1, we propose that BOEM continue applying only the promulgated EPA regulatory SILs (40 CFR 51.165(b)(2)) until the Gulf of Mexico and Alaska regional air quality studies are completed. If those studies conclude that changes to the AQRP are warranted, the results of the studies may inform selection of appropriate SILs. There does not appear to be a particular standard or formula used by EPA to establish SILs, as they range from 1 to 5 percent of the NAAQS. BOEM has the option of identifying SILs based on a scientific rationale, or some percentage of the NAAQS it deems to be significant. Selection of SILs is another opportunity to involve the regulated community. If BOEM elects to continue use of EPA SILs, we recommend that BOEM adopt, in lieu of any EPA interim SILs, SILs set at no less than 5 percent of the applicable NAAQS. When EPA promulgates a SIL that is incorporated in the affected state's SIPs, then the new regulatory SIL would apply.
Pg. 19735	BOEM is soliciting information on the most appropriate method for establishing and reporting air quality requirements associated with decommissioning and structure removal activities in the context of the AQRP. This includes a request for information and comment on when and how BOEM should receive air quality emission data and information associated with decommissioning and structure removal and how an assessment of feasible ERM should be applied. One approach on which BOEM solicits comment would be whether it should provide for only the collection of emissions data associated with decommissioning activities for some period of time, followed by a second phase in which BOEM could utilize the data that was previously collected to craft an approach tailored to this unique type of activity.	We support BOEM's proposal to collect decommissioning emissions data for a period of time in order to craft an informed approach to address these unique activities. However, emissions from decommissioning should not be included in plan emissions inventories at the onset of an offshore project. It is impossible to predict or quantify emissions associated with decommissioning at the onset of a project. Production and development platforms may operate for 20-30 years, or longer, before decommissioning would occur, far beyond the ten year plan projection established in the proposed rule. During the operation of the platform, there may be various modifications and additions that may require revisions to plans. Consequently, predictions of decommissioning activities and emissions estimated during the initial planning stage will be obsolete when decommissioning actually occurs. Therefore, to require the collection of decommissioning emissions during initial plan preparation provides no useful information to BOEM.

Appendix C - Responses to BOEM's Specific Requests for Comment on Rule Provisions

81 Federal Register	BOEM Request for Comment	Response and Comment Reference
Pg. 19737	Air emissions of an MSC may often occur close to shore, and therefore would cause a greater impact onshore and/or at the SSB, than a similar amount of emissions from that same MSC which occur in the vicinity of the facility. BOEM is seeking comments on this proposed approach and will consider alternative methods that more accurately attribute emissions from mobile sources to the appropriate facility.	See Section 1.2.4 and chapters 3 and 8 for detailed discussion regarding MSC.
Pg. 19738	BOEM requests comments on the various types of modelling that could or should be used to more accurately reflect the origin and dispersion of emissions that are generated by mobile sources, such as MSCs, and under what circumstance volume source modelling would be appropriate or inappropriate.	As discussed in sections 1.2 and Chapter 3, OCSLA does not grant BOEM the authority to regulate MSC unless they are attached to the OCS facility and used for the transport of production. However, we have provided in Section 8.3, an assessment of the appropriateness of BOEM's proposed method of analysis.
Pg. 19739	BOEM welcomes comments and analysis on the potential impacts of emissions generated from OCS sources on the air quality over State submerged lands and/or the potential impact of such emissions on the environment above such lands, as well as any scientific, technical, or other information that can be provided to measure or evaluate the impact of OCS originated air pollutants on the area over State submerged lands.	See sections 1.2.5 and 8.6 for further discussion regarding point of compliance at the state seaward boundary and the availability of modelling tools and monitoring data. As discussed in sections 1.1 and 2.3, BOEM has not demonstrated that offshore activities significantly affect onshore air quality and prevent attainment or maintenance of NAAQS.
Pg. 19740	Because of this, the proposed regulations specify the effects of emissions, for modelling purposes, would be evaluated at those locations in the State(s) where the concentration of any given pollutant is expected to be the highest. Additionally, the effects of emissions would be evaluated in the non-attainment area where the concentration of any given pollutant is expected to be the highest among nonattainment areas for that pollutant (if different from the most affected area). This location might be on land or over State submerged lands. That location in the model would likely be the same for many, but not necessarily all, pollutants. Those air pollutants, such as O ₃ , that are not directly emitted by a facility, but are instead created in the atmosphere, are often more heavily affected by climatological or meteorological conditions, which often cause them to concentrate at a location different than other air pollutants. Given technological advances, BOEM does not anticipate that adding additional hypothetical receptor locations to the modelling should present any technical difficulty but welcomes comments on how this requirement could be implemented most effectively.	As discussed in Section 8.9, in order to meet these requirements, all applicants will need to perform long-range transport modelling as such receptors are much further than 50 km from areas in the GOM or the Arctic Ocean. BOEM should limit the domain of the required modelling.
Pg. 19741	BOEM requests comments on the EET formulas and the underlying analysis used in this rulemaking or whether absolute values may be more appropriate.	As documented in Section 6.3, mass or absolute values thresholds conflict with the authority granted by OCSLA because there is no direct connection to onshore impacts. At the very least, distance from shore must be considered when establishing EETs.
Pg. 19742	As currently defined, the AQCR boundaries do not extend to include the OCS and, for this reason, it may sometimes be difficult to determine which AQCR would be most applicable. BOEM also recognizes that some AQCRs are very large, so it may not be certain that offsets in one part of the AQCR have a benefit to the area affected by offshore emissions. BOEM requests comments on how to best to define the relevant AQCR(s) and on whether there may be more appropriate alternative to defining the offset-generating areas or how to best refine the approach of applying AQCRs in this context.	In concept, the emissions credit provision provides benefit to the OCS operators. However, as discussed in Section 7.1, because BOEM has not established any specific emission credit regulatory requirements and states do not generally have banking systems for areas designated as attainment, the usefulness of the emissions credit program is significantly limited and would be burdensome, likely impossible, to implement solely on a case-by-case basis. In consultation with the regulated community and the adjacent states, BOEM must fully develop and propose an emissions credits system that addresses this issue and others.
Pg. 19743	In maintaining a "performance-based" approach to the proposed rule, BOEM is not proposing specific types of BACT, technical standards, or ERM. BOEM is seeking comment on whether it should identify various forms of ERM that have been approved in other situations, whether by BOEM, the USEPA or another regulator, and whether BOEM should provide additional specificity on how to determine the most appropriate	As discussed in Section 7.1, we conditionally support a presumptive ERM program. However, any finalized rule must allow an option for OCS operators to prepare an emission source-specific ERM analysis, taking into consideration technical, economic, and safety considerations specific to their facility.

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81 Federal Register	BOEM Request for Comment	Response and Comment Reference
	<p>form of ERM and/or what cost effectiveness would be considered presumptively reasonable in making such a determination. All of these issues could be addressed in the context of establishing criteria for what may constitute “presumptive BACT” or presumptive ERM. BOEM invites comment on whether BOEM should adopt presumptive ERM and, if so, what processes it should use for adopting and updating the various forms of presumptive ERM that are suggested or approved.</p>	
Pg. 19744	<p>BOEM has examined the USEPA approach and intends to take these guidelines into consideration in developing its own guidelines for ERM, as well as for making a determination as to the viability and cost-effectiveness of alternative forms of ERM “taking into account energy, environmental, and economic impacts and other costs.” Because BOEM intends to publish its own ERM guidelines, it solicits comments on the USEPA’s approach and the underlying methodology for making the determination as to what forms of ERM may be most appropriate under various circumstances, as well as comments on why or under what circumstances the USEPA approach may or may not be appropriate to the OCS environment and how the ERM requirements could be best tailored to the unique conditions of the offshore oil and gas industry.</p>	<p>As discussed in Section 7.1, BOEM must fully define and develop an emissions reductions measures program and ensure that it is appropriate for OCS operations.</p>
Pg. 19745	<p>BOEM is proposing mandatory record keeping of fuel usage and activity data for all emissions sources, and we are proposing that non-exempt facilities subject to emissions reductions controls or mitigation and facilities that are exceptionally large be required to monitor their actual emissions..... BOEM welcomes comments on the potential application of PEMS and/or the best approaches for selecting and evaluating monitoring systems</p>	<p>As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.</p>
Pg. 19746	<p>BOEM solicits comments on various alternatives that could be used to achieve the Bureau’s objective of monitoring large emitters. BOEM lists four potential alternative methods of doing so.</p>	<p>As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.</p>
Pg. 19747	<p>OCSLA requires DOI to make a decision on whether to approve an EP within 30 days and a DPP within 60 days. Consequently, the air quality review process for the plan is limited in its ability to provide extensive analysis of complex plans. BOEM’s regulations require a similar review timeframe for DOCDs. While there is an opportunity for public comment on plans, there is limited opportunity for public review of air pollution measures in EPs, DPPs, or DOCDs. BOEM requests comments on how more opportunity for public input could be provided, while observing legal constraints on plan review timeframes.</p>	<p>We believe that the provided public comment periods provide sufficient opportunity for interested parties to comment. Furthermore, the OCS Program allows for extensive public engagement through the opportunity to provide comment during each major stage of energy development planning, including programmatic EIS, lease sale EIS, as well as Exploration and Development and Production Plans.</p> <p>In addition, the proposed rule requirements could jeopardize BOEM’s ability to effectively review, process and approve plans during the specified timelines (see Section 10.2 for detailed discussion).</p>
Pg. 19747	<p>BOEM is also proposing that lessees and operators resubmit their plans approximately every ten years to confirm compliance with all applicable requirements in effect on the date of resubmission. BOEM requests comments on this provision, particularly with respect to the potential impact on lessees and operators</p>	<p>As discussed in 1.3.2, the requirement to resubmit and obtain re-approval of previously approved plans is problematic and presents potential breach of contract and takings issues. As discussed in sections 10.1 and 10.3, we believe the current program is protective of onshore air quality. Contributions from existing facilities are accounted for in background concentrations when new facilities conduct air quality modelling to demonstrate compliance with the NAAQS. Consequently, BOEM should not require plan resubmittals. Furthermore, as detailed in ICR Comments submitted by OOC</p>

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		and API, the costs and burden associated with plan submittals and resubmittals could be significant.
Pg. 19748	BOEM is soliciting comments on alternative ways for how it might effectively ensure that the increments are not “consumed” in the relevant attainment areas or what steps it might take to protect the increments in an operational context without creating an undue burden on lessees or operators. Several alternatives are presented	As discussed in sections 1.2 and 2.2, applying USEPA’s PSD program, including comparison to the increments, to the OCS is inappropriate and beyond the scope of BOEM’s authority under OCSLA. However, sections 8.7 and 8.8 present comments on BOEM’s proposed process.
Pg. 19750	The new provision of this section is intended to apply to those situations where an organization is proposing to install a new facility on a RUE and that facility is not included in an exploration or development plan. In the event that an existing RUE was approved as part of an exploration or production plan, no new requirements would be imposed. Similarly, any application for a new RUE that is included within the scope of a proposed exploration or development plan would not be affected by the requirements of this paragraph. BOEM requests comments on the most appropriate method for establishing and reporting air quality requirements associated with the removal of any facility installed pursuant to a RUE in the context of the AQRP.	<p>As discussed in Section 12.6, emissions from RUE are not regulated under BOEM’s current AQRP and BOEM has not demonstrated that RUE activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Nor have RUE emissions (or any other OCS authorized activity emissions) been identified as significant sources in any affected state SIPs. Consequently, there is no compelling reason to regulate emissions from RUE activities.</p> <p>In regard to establishing and reporting air quality requirements associated with the removal of any facility, decommissioning or removal of a facility installed pursuant to a RUE would occur beyond the ten year plan projection established in the proposed rule. Predictions of removal activities and emissions estimated during the initial planning stage will be obsolete when decommissioning actually occurs. Therefore, to require the collection of decommissioning emissions during initial plan preparation provides no useful information to BOEM.</p>
Pg. 19750	Currently, the GOM Region prepares its emissions inventory by allowing lessees and operators to directly input data either on fuel use or on equipment usage and operating time. BOEM then uses this data to calculate the resulting emissions. This proposed rule would allow for the continuation of that practice in the GOM Region, and the expansion of that practice to other OCS regions. Accordingly, the proposed rule requires the submission of (1) facility and equipment usage, including hours of operation at each percent of capacity for each emissions source; and/or (2) fuel logs containing monthly and annual fuel consumption data showing the quantity, type, and sulphur content of fuel used for each emissions source. The proposed rule would require the information provided under this proposed section should be at a sufficient level of detail so as to facilitate BOEM’s compilation of a comprehensive OCS emissions inventory of air pollutants. BOEM solicits comments on various alternative methods for ensuring the accurate reporting of emissions and the appropriate methods that might be used to ensure the accuracy of the data and information it collects.	We support the continued use of GOADS and its expansion to all OCS regions under BOEM jurisdiction. However, as discussed in sections 2.6 and 11.6, the proposed monitoring and recordkeeping requirements in the proposed rule extend beyond what is currently required for GOADS reporting. We propose that BOEM require that operators monitor fuel and activity in accordance with their approved plan.
Pg. 19754	BOEM seeks comment on: (1) Whether this fifth [see above] alternative would be appropriate or is needed, particularly given that the emission factors used in USEPA’s marine and nonroad emission models apply regardless of flag (i.e., emissions from similar engines in similar use regardless of whether the engine is on a US or a foreign-flag vessel); (2) how such an approach would be applied to engines that use Heavy Fuel Oil, since the NOX Technical Code (NTC) allows engines to be certified on diesel fuel (which can have relatively high sulfur content); and, (3) what approach could be taken to estimate pollutants other than NOX (since there are no MARPOL standards for the majority of criteria and precursor pollutants) and, if using one of the other approaches is preferred, whether the NOX emission factors from those other approaches should be used and this fifth alternative be not adopted.	<p>BOEM assertion that “particularly given that the emission factors used in USEPA’s marine and nonroad emission models apply regardless of flag (i.e., emissions from similar engines in similar use regardless of whether the engine is on a US or a foreign-flag vessel);” is not accurate. The emission factors used in USEPA’s marine and nonroad emission models only apply to U.S. flagged vessels. Foreign flagged vessels comply with MARPOL when operating in the ECA.</p> <p>BOEM’s proposed regulations seem to conflate two distinct and separate issues: emissions of SO_x and emissions of NO_x. SO_x emissions are a product of fuel sulphur content and are not an engine certification matter. Emissions of NO_x, however, are an engine certification matter, and marine engines are tested with a reference fuel. The emission factors for engines are approved in accordance with test cycles defined in the NO_x Technical Code. The means of SO_x compliance for ships subject to MARPOL VI is stated on the IAPPC and are approved in accordance with IMO guidelines such as MEPC Resolution 259(68). NO_x emissions are the subject of the EIAPPC, which is then used to endorse the IAPPC.</p>

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		<p>Under the BOEM proposals, however, the fuel sulphur content used for engine testing would form part of the engine approval. This would represent a major deviation from the IMO NO_x Technical Code requirements, and would create difficulties in terms of demonstrating compliance. In addition, SO_x emissions should be decreasing already from oil and gas sources, particularly MSCs, in the OCS due to the use of ultra-low sulfur diesel fuel.</p> <p>BOEM has not demonstrated that the current method for determining emissions factors is ineffective. As discussed in Section 12.3, the proposed hierarchy will require a significant amount of work to evaluate the required method for determining the emissions factor for each pollutant and each emissions source, thereby exponentially increasing the amount of time required to prepare emissions inventories.</p>
Pg. 19755	<p>Given that equipment tends to operate less efficiently over time, the lessee or operator should make an appropriate upward adjustment in the emissions estimates for older equipment (e.g., to reflect emission deterioration over time). BOEM solicits comments and suggestions on how this might most appropriately be conducted and the extent to which there are appropriate, documented, methodologies for making these kinds of adjustments.</p>	<p>We have reviewed multiple state agency permitting programs and the EPA's permitting program for the Eastern Gulf of Mexico. We have not identified an analogue for the age-based adjustments that the BOEM has proposed in the NPRM.</p> <p>As explained in Appendix A, Section 550.205(b)(2)(vii), we are not aware of data that can reasonably be relied upon in making such age-based emission adjustments. We offer the following comments:</p> <ul style="list-style-type: none"> - It is not feasible to make appropriate upward adjustments in emission estimates for older equipment. Emissions of a completely overhauled engine may match that of a relatively new engine so an engine's age may not necessarily result in deterioration of an engine's emissions performance; - There is little to no actual emissions test data that supports BOEM's assertion that emissions increase on older equipment. The USEPA's compilation of emission factors for various emissions sources (AP-42) does not provide for age-based deterioration adjustments to emission factors. We request BOEM to remove language related to age-based adjustments to emission factors. - If BOEM requires an age-based adjustment of emission factors, we request BOEM to only require the use of deterioration factors when they have been developed by the manufacturer. For example, 40 CFR 1042.245 requires manufacturers to develop deterioration factors for certain categories of engines. Consistent with EPA's approach, the requirement to develop such factors should be placed on the engine manufacturers, not the engine purchaser. - For engines certified under Regulation 6 of MARPOL Annex VI, and Chapter 2 of the NO_x Technical Code (NTC), the NTC specifies that the engine maintenance shall conform to its provisions and as such, if the maintenance complies (regardless of the years of operation) with the original equipment manufacturer's maintenance requirements, then the certificate remains valid and any emissions derived from the NTC are also valid.
Pg. 19755	<p>The USEPA concept of PTE, which it defines at 40 CFR 51.301, is similar to the BOEM concept of facility emissions, in that both PTE and facility emissions refer to the maximum aggregate capacity of a stationary source to emit a pollutant under its physical and operational design. In both cases, this concept includes all emissions sources attached to a facility but excludes the attributed emissions of</p>	<p>In order to reduce confusion regarding differing definitions or uses of the same term by USEPA and BOEM, we support the use of "facility emissions" and "projected emissions" rather than "PTE".</p>

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	<p>unattached non-stationary sources.⁷³ For further details on the concept and use of PTE in the USEPA context, see “Potential to Emit: A Guide for Small Business,” USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-456/B-98-003, October 1998, available at: http://www3.epa.gov/airtoxics/1998sbapptebroc.pdf. BOEM is considering whether to use the term PTE instead of facility emissions, and BOEM invites comment on this question.</p>	
Pg. 19757	<p>Finally, just as BOEM is considering using the term PTE in place of the term facility emissions, BOEM is also considering using USEPA’s term secondary emissions (as defined in 40 CFR 51.301) in place of attributed emissions. BOEM welcomes comment on this question.</p>	<p>In order to reduce confusion regarding differing definitions or uses of the same term by USEPA and BOEM, we do not support the use of “PTE”. Furthermore, as discussed in sections 1.2.4 and 3, BOEM cannot regulate emissions from MSC, which are outside the scope of BOEM’s jurisdiction.</p>
Pg. 19758	<p>Consistent with current BOEM policy, any reference in these proposed regulations to major precursor air pollutants would exclude methane because the USEPA does not include methane in the definition of VOCs and does not require a methane analysis of ground level ozone formation for offshore facilities; both because methane has not historically been considered a significant precursor air pollutant with respect to distances and transport times relevant to BOEM regulation of offshore activities; and because the USEPA has not elected to formally classify methane as a precursor pollutant for O3. BOEM solicits comments on this proposed exclusion and on how BOEM should address the effects of methane emissions on secondary O3 formation and under what circumstances it would be appropriate, in the event it decides to do so.</p>	<p>Methane is not a pollutant regulated by the NAAQS and therefore should not be included in any BOEM rule.</p> <p>Furthermore, BOEM should consider the same ozone precursors that are considered by states in preparing State Implementation Plans for ozone in nonattainment areas, namely NO_x and VOC. EPA’s definition of VOC excludes both methane and ethane because they react very slowly in the atmosphere and therefore can only form ozone very slowly which allows time for emissions to be greatly diluted. Focusing on the same ozone precursors (NO_x and VOC) promotes consistency in analyses performed by BOEM and states and reduces burden on the regulated community to provide data.</p>
Pg. 19758	<p>The proposed rule would not immediately require analysis or reporting of O3. Rather, once the new emissions exemption studies have been completed, new EETs would likely be established to address O3 impacts to the State. Proposed paragraph 550.304(b) details the circumstances when O3 modelling would be required. Comments may be submitted as to how this would best be accomplished and at what point in time the implementation of these new standards would be most appropriate.</p>	<p>As discussed in Section 8.2, expensive and complex photochemical modelling is not warranted given the minimal impact of OCS operations on onshore air quality. As discussed in Section 2.4, we concur that implementation of any new EETs and modelling requirements should be postponed until the BOEM scientific studies have been concluded and BOEM approved photochemical models are available.</p> <p>In addition, any new EETs should be subject to the public review and comment process before adoption by BOEM.</p>
Pg. 19759	<p>(footnote) Currently, BOEM utilizes OMB-approved forms BOEM-0134 and BOEM-0135 for this purpose. The forms are being revised in connection with this rulemaking. BOEM also solicits comments on the proposed new forms, in terms of their usefulness, readability, complexity and completeness.</p>	<p>See Section 12.4 and ICR Comments submitted by OOC and API for detailed comments regarding BOEM’s draft forms. Due to the limited time available to comment, it was not feasible to provide more detailed comments on the AQR forms at this time.</p>
Pg. 19759	<p>The USEPA is currently working on an E-Enterprise solution for emissions data collection, whereby facilities (or companies) would report emissions data through a central place for distribution to USEPA, the States, and others. Since BOEM is proposing direct facility reporting as well, BOEM may elect to partner on this E-Enterprise solution for supporting BOEM’s needs alongside those of the USEPA. This approach may be more efficient both for the regulated entities as well as for USEPA and BOEM to use and share the data. BOEM welcomes comment on this alternative and whether there may be any impediments or complications should BOEM wish to move in this direction.</p>	<p>We support the continued use of the AQR forms, which will standardize the data submitted to the agency, which will reduce complexity and future costs and burden to the regulated community and to BOEM. However, as discussed in Section 12.4, BOEM must update the functionality of the AQR spreadsheets prior to publication of the final rule and allow for additional comment.</p> <p>However, should BOEM elect to partner on this E-Enterprise solution, reporting must be limited to those data required under BOEM’s regulation that are warranted to ensure compliance with NAAQS, and sufficient public input should be sought before any E-Enterprise solution is implemented.</p>

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Pg. 19761	While this proposal takes the approach described here for aircraft and onshore emissions, BOEM is considering whether it should instead establish a requirement whereby plans that propose aircraft and onshore emissions above a certain threshold, expressed as either a percent of the total plan emissions or an absolute amount of emissions, would have to include emissions from aircraft and onshore support facilities. BOEM would welcome comments on this approach, and also any data or analysis relevant to the issue of whether, and to what extent, aircraft and onshore emissions should be considered in evaluating a facility's emissions profile. Please provide comments on this approach and what threshold might be most appropriate.	As explained in Section 12.5 of the comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations. Onshore support emissions are sufficiently addressed by state and/or EPA regulatory programs.
Pg. 19761	The proposed rule would collect information on onshore support emissions if two specific criteria are both met: 1) if a plan which is already required to conduct modelling results in incremental increases in concentration of a pollutant that are greater than 95 percent of the value of a SIL (this is the same criteria that applies to the inclusion of aircraft); and 2) if the relevant onshore support facilities are not already permitted by the USEPA or a relevant State authority. BOEM solicits comments on this proposal, both with respect to whether gathering data on onshore support facilities is necessary and/or appropriate and what criteria should be used to determine the circumstances under which data about onshore support facility emissions should be collected. BOEM solicits comments on what types of onshore facilities should be identified and reported with respect to their air emissions and how best to evaluate their emissions in the context of the AQRP.	As explained in Section 12.5 of the comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations. Onshore support emissions are sufficiently addressed by state and/or EPA regulatory programs.
Pg. 19769	BOEM recognizes that the USEPA classifies a short-term facility as being a facility that is located at the same location for no more than two years and solicits comments on the implications of retaining or potentially changing this longstanding practice.	We support the continued use of BOEM's classification that short-term facility means a facility that is located at the same location for no more than three years.
Pg. 19769	BOEM solicits comments on whether the technical feasibility should have to be demonstrated for the particular source identified in the plan or whether the feasibility could be demonstrated through use of similar but different sources.	See Section 7.1 for a detailed discussion regarding ERM and technical feasibility. We believe it would benefit the regulated community, and BOEM, if BOEM would establish and update an approved presumptive ERM data repository or clearinghouse. However, as discussed above, because technical and economic feasibility may vary significantly between OCS facilities, any finalized rule or guidance must allow an option for OCS operators to prepare an emission source-specific ERM analysis, taking into consideration technical, economic, and safety considerations specific to their facility.
Pg. 19770	At the present time, BOEM does not have EETs for Pb, PM2.5, or PM10, nor has it established EETs that would apply to anything other than the projected annual emissions. BOEM recognizes there may be a more appropriate distance-adjusted maximum emission exemption threshold for these pollutants and solicits comments from stakeholders on what they should be. Any comments should include an analysis of the reasoning used to support an alternative threshold, keeping in mind that the key goal is to ensure that offshore projected emissions of Pb, PM2.5, or PM10 do not "cause or contribute to a violation" of their corresponding NAAQS.	As discussed in sections 2.4 and 6.1, BOEM should not finalize emissions exemption threshold ranges prior to completing its scientific studies. Furthermore, as discussed in Section 6.3, EETs must account for distance to the onshore area of a State
Pg. 19772	As an alternative to the proposed distance-based formula, BOEM is also considering an option in which it would establish new minimum EETs based on the PSD emissions limits in the USEPA's regulations at 40 CFR 52.21(b)(23)(i). Those USEPA tables are intended primarily to determine whether a facility will generate potentially significant incremental increases in pollutant concentrations in the area surrounding the proposed emissions source. BOEM could either apply the current absolute numbers or utilize the values in the USEPA table and adjust them, on either a linear basis or on the basis of a Gaussian dispersion equation, in an appropriate manner based on the distance of the facility from the State BOEM solicits comments on this and other possible alternative approaches to establishing new maximum EETs (above which all plans would be subject to modelling) and minimum EETs (below which	As documented in Section 6.3, mass or absolute value thresholds conflict with the authority granted by OCSLA because there is no connection to onshore impacts. Furthermore, BOEM should delay this decision until the scientific bases for EETs have been established. Also, as discussed in Section 6.6, the proposed minimum EETs in Table 1 are in error.

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	BOEM would not establish any new EETs). Such a discussion would ideally include information both on the levels of the two sets of formulas, as well as on the type and nature of the formulas that should be applied	
Pg. 19773	In order to determine common ownership, BOEM will rely on the criteria defined by the Office of Natural Resources Revenue (ONRR) for evaluating whether or not two companies should be considered affiliates, as defined in the regulations at 30 CFR 1206.101 and 30 CFR 1206.151. BOEM solicits comments from lessees and operators with respect to how it could most effectively limit the application of these consolidation criteria to relevant parties and avoid the consolidation of emissions associated with facilities that are operated by unaffiliated companies.	Please see sections 1.4 for discussion of consolidation of multiple facilities.
Pg. 19777	There are some circumstances where the USEPA has not established a SIL for a given CP or in which it has established only an interim SIL that it or the relevant State air quality regulatory authority may also use in evaluating the impacts of a proposed facility. In some circumstances, the USEPA may have established one or more SILs in its regulations and an additional interim SIL(s), typically for some other averaging time(s), outside of its regulations. In other cases, the USEPA may have repealed a SIL without establishing a new one. Thus, there may be situations where a lessee or operator may propose a plan that exceeds the relevant EETs, then perform modelling only to find there may not be a relevant SIL to compare against its incremental emissions or a situation where it may be unclear which SIL(s) to use. In similar situations where the USEPA or the State would issue an air quality permit, the USEPA or the relevant State permitting authority has issued permitting guidance to supplement its regulations. The proposed rule does not contain a provision on this topic and BOEM solicits comments on how best to address this issue. BOEM also requests comment on what BOEM should do about NAAQS that do not have corresponding SILs in the USEPA regulations; comments on the following two alternative approaches are particularly welcome. One alternative would be for BOEM to require in the final rule that, for any NAAQS (pollutant and averaging period) for which there is no SIL in 40 CFR 51.165(b)(2), lessee and operators must apply the appropriate SIL being used by the most affected State (at the point where the incremental emissions caused by the facility would be highest). Another alternative would be for BOEM to establish its own interim SILs based on the USEPA's interim SILs, to be used unless and until the USEPA finalizes appropriate SILs in its regulation at 40 CFR 51.165(b).	<p>As discussed in more detail in Section 9.1, BOEM should adopt its own SILs once the scientific studies are complete. In Section 9.1, we propose that BOEM continue applying only the promulgated EPA regulatory SILs (40 CFR 51.165(b)(2)) until the Gulf of Mexico and Alaska regional air quality studies are completed. If those studies conclude that changes to the AQRP are warranted, the results of the studies may inform selection of appropriate SILs. There does not appear to be a particular standard or formula used by EPA to establish SILs, as they range from 1 to 5 percent of the NAAQS. BOEM has the option of identifying SILs based on a scientific rationale, or some percentage of the NAAQS it deems to be significant. Selection of SILs is another opportunity to involve the regulated community.</p> <p>If BOEM elects to continue use of EPA SILs, we recommend that BOEM adopt, in lieu of any EPA interim SILs, SILs set at no less than 5 percent of the applicable NAAQS. When EPA promulgates a SIL that is incorporated in the affected state's SIPs, then the new regulatory SIL would apply.</p> <p>Finally, as discussed in Section 2.3.1, all the SIPs developed by the states bordering the Gulf of Mexico and Alaska, show OCS-based contributions to onshore pollutant concentrations as small. In all cases, the SIPs indicate that the states responsible for achieving NAAQS compliance do not consider OCS sources to be significant contributors.</p>
Pg. 19777	In contrast to the other criteria air pollutants, the USEPA's current regulations do not set a SIL or AAI for O3. Rather than determine equivalent standards for O3 at the present time, BOEM is proposing to require ERM based on emissions precursors of O3 when modelling would indicate the NAAQS for O3 would be exceeded. Accordingly, lessees and operators would be required to add the results of their photochemical modelling, if required under section 550.304, to the existing background concentrations and determine if a NAAQS for O3 would be exceeded for any averaging time. If any NAAQS is exceeded, the lessee or operator would be required to apply ERM. BOEM solicits comments both on this approach and whether photochemical modelling should be required in all cases. Alternatives could include reserving a full scale analysis until such time as the USEPA has established a SIL for O3, applying a consultative process between applicant and BOEM consistent with current appendix W until such time as revisions to appendix W have been finalized and the USEPA has established or recommended significance levels.	As discussed in sections 1.1 and 2.3, BOEM has not provided any study or evidence to demonstrate offshore emissions significantly affect ozone concentrations onshore or within the state seaward boundary. Emission reduction measures for VOCs should not be required unless BOEM's ongoing studies conclude there is a significant onshore impact. Finally, there is no current justification for requiring facilities to perform complex photochemical modelling to address ozone compliance with the NAAQS. Any rulemaking is premature until BOEM's studies are complete.

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Pg. 19779	As is the case with current BOEM regulations, the requirements of this section differ depending on whether the potential impacts of any proposed facility would affect only attainment areas or whether non-attainment areas might also be affected. More stringent air quality requirements, of course, apply to situations where an area already exceeds a relevant pollution standard than in an area that is below that standard (i.e., has better overall air quality). BOEM has not proposed a definition of what “affect” means in this context but solicits comments on how this determination should be best made.	Please see Section 9 for a detailed discussion of our proposed definition of “affect the air quality of any State”
Pg. 19779	As discussed earlier, the current regulations use the MACIs in place of the AAs for determining whether longterm facilities have sufficiently reduced their impacts on attainment areas. The MACIs were based on the AAs at the time the current rule was promulgated. While BOEM is now proposing to cross-reference the AAs, it is also considering whether other standards would be better. Particularly, BOEM is considering whether it would be better to use standards that are based on a percentage of the level of the NAAQS, rather than the AAs. BOEM would appreciate comment on this issue and on what standards to set. BOEM also requests comments on the most appropriate method for defining the size and extent of the relevant “baseline areas” for the purpose of conducting the AQRP analysis.	As discussed in sections 1.2 and 2.2 applying USEPA’s PSD program, including comparison to the increments, to the OCS is inappropriate and beyond the scope of BOEM’s authority under OCSLA. Please see Section 9 for a detailed discussion of our proposed definition of “ <i>Affect the air quality of any State</i> ”
Pg. 19782	In the event that a lessee or operator elected to reduce the pollutant emissions of an onshore facility to offset corresponding emissions for a new facility proposed on the OCS, that lessee or operator would be required to notify the relevant State air quality regulatory body and arrange for the modification of the permit for the underlying onshore facility to reflect the proposed reduction in emissions. The State could then update the permitted level of emissions which would ensure compliance with the reduced emissions requirements on an ongoing basis. The State may also need to update its SIP, as appropriate, and modify its reporting to the USEPA. Lessees have not typically utilized emissions credits as a pollution mitigation measure in the past. BOEM solicits comments on the practicality and potential costs associated with the implementation of these proposals at the State level, as well as comments on how these proposals could most effectively be implemented in coordination with the States.	<p>As discussed in Section 7.6, Section 550.309(e)(6) requires operators to notify states of a need to revise their State Implementation Plans (SIP) when operators acquire emission reduction credits from onshore sources. We are not aware of any SIPs in the Gulf States or Alaska that include emission controls from OCS sources as part of attainment demonstrations. Furthermore, we are not aware of requirements for onshore facilities to notify states when reducing emissions at a facility in order for the state to update its SIP. States and federal agencies will be notified of emissions reductions at onshore facilities through typical permitting processes; therefore, there is no need to provide this additional information to states. This creates a situation which is unnecessarily duplicative and redundant. As discussed above, BOEM must fully develop its emissions credits scheme prior to finalizing the rule, which would include a mechanism for states to access the emissions credits banking database.</p> <p>Furthermore, the requirement is vague. If BOEM elects not to remove this requirement, BOEM must clarify and specify what information and data the designated operator would be required to submit, and to whom.</p>
Pg. 19782	Under the proposed rule, if a lessee or operator is operating under an approved plan, it would be required to resubmit a plan for a periodic air quality review no more frequently than ten years after BOEM’s previous approval of the plan. This provision would be added in furtherance of the objective of section 5(a)(8) of OCSLA, which requires BOEM to ensure compliance with the NAAQS, and which makes no exceptions with respect to previously approved plans. All of the applicable requirements of this subpart in effect on the date of resubmission would apply on the same basis to a resubmitted plan as for an initial plan. BOEM requests comments on this provision, particularly with respect to the potential impact on lessees and operators.	<p>As discussed in Section 1.3 and Chapter 10, we believe the current program is protective of onshore air quality. BOEM has not demonstrated that offshore activities significantly affect onshore air quality and prevent attainment or maintenance of NAAQS. Contributions from existing facilities are accounted for in background concentrations when new facilities conduct air quality modelling to demonstrate compliance with the NAAQS. Consequently, BOEM should not require plan resubmittals. Furthermore, as detailed in ICR Comments submitted by OOC and API, the costs and burden associated with plan submittals and resubmittals could be significant.</p> <p>As discussed in Section 1.3.2, the requirement to resubmit and obtain re-approval of previously approved plans is problematic and presents potential breach of contract and takings issues.</p>

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Pg. 19784	BOEM solicits comments as to how it should best implement the requirements of this section with respect to those facilities that would be required to report their actual emissions. BOEM invites comments on this issue with respect to how best to achieve the objective of obtaining actual data on potentially large pollution emitters while not adversely impacting those small-volume emitters whose emissions do not have any realistic potential to adversely affect the air quality of any State.	As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.
Pg. 19784	While the current regulation requires monitoring and reporting of emissions, it does not specify what monitoring is required. The proposed rule at section 550.311 would provide more specificity on how the monitoring and reporting must be carried out. BOEM believes a more comprehensive approach to emissions measurement and monitoring could improve the quality and type of information for estimating impacts on affected States. BOEM requests comments and suggestions with respect to the best approach to post-approval record-keeping, monitoring and reporting, including potential alternative approaches.	As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.
Pg. 19784	BOEM seeks comment on whether it should require or recommend that the stack testing data be collected with the USEPA's electronic reporting tool and submitted via CDX (Compliance and Emissions Data Reporting Interface-), so that the USEPA can update the AP 42/WebFIRE emissions factors and so BOEM can compile the relevant data and supply it to other lessees and operators for their use in the future.	BOEM should recognize that submitting stack testing data to USEPA's electronic reporting tool and submitted via CDX adds additional costs to stack testing. Therefore, BOEM must propose and allow the regulated community to comment on how they intend to use the information in WebFIRE prior to requiring it. We recognize that it could be beneficial to compile all of the test data for each make / model of engine and establish emission factors that an operator could use in a plan in lieu of stack testing. In such a case, BOEM could use an identifier in ERT or WebFIRE that could make it easier to identify offshore source testing.
Pg. 19784	BOEM solicits comment on whether there are other ways of collecting information or monitoring to ensure ongoing compliance with approved plans. Additionally, BOEM requests comment on alternative approaches to ensure compliance with an approved plan. BOEM also requests specific comment on whether there are ways to minimize the data collection and reporting burden associated with fuel logs while also ensuring the ongoing compliance with an approved plan. For example, there may be circumstances under which some facilities and/or MSCs would generate such low levels of emissions that there would be no practical possibility that the operations of those facilities and/or MSCs, cumulatively or separately, could exceed any relevant EET(s). Under those circumstances, the requirement to maintain fuel logs and/or activity data records may not be necessary or could be modified. BOEM solicits comment on what those circumstances may be and how BOEM might craft an exception or modification to the record-keeping requirements for small facilities and/or MSCs, so as to minimize the cost burden on lessees and operators – consistent with BOEM's need to ensure the integrity of its air quality regulatory program.	As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.
Pg. 19791-19792	Based on this initial analysis, BOEM expects the implementation of this proposed rule may have a significant economic impact on a substantial number of small entities under 5 U.S.C. 605(b). BOEM, however, is seeking comments on the IRIA to inform its analysis and conclusions regarding the degree to which this rule may have an economic impact on such entities. Although BOEM does not believe that the proposed rule would have a significant economic impact on a substantial number of small entities, BOEM is requesting comment on the costs and impacts of the proposed policies in this rule on small entities. We will consider all comments at the final rule stage. We specifically request comments on the	Appendix B and ICR Comments submitted by OOC and API provide a detailed discussion of the potential economic impact of the proposed rule.

Appendix C - Responses to BOEM's Specific Requests for Comment on Rule Provisions

81 Federal Register	BOEM Request for Comment	Response and Comment Reference
	<p>compliance cost estimates as well as regulatory alternatives that would reduce the burden on small entities.</p>	
Pg. 19796	<p>E.O. 12866 (section 1(b)(2)), E.O. 12988 (section 3(b)(1)(B)), E.O. 13563 (section 1(a)), and the Presidential Memorandum of June 1, 1998, require every agency write its rules in plain language. This means that, wherever possible, each rule must: a) have a logical organization; b) use the active voice to address readers directly; c) use common, everyday words and clear language, rather than jargon; d) use short sections and sentences; and e) maximize the use of lists and tables. If you feel we have not met these requirements, send your comments to Peter.Meffert@boem.gov.</p>	<p>The proposed rule is repetitive and in some cases contradictory. Therefore, its logical organization could be greatly improved. Our recommended comments address these organizational issues.</p> <p>New designations and jargon are introduced by the proposed rule. For example, MSC is a new term that is not typically recognized in the regulated community and is unique to the proposed rule. Likewise, the term ERM is a new term and unique to the proposed rule.</p> <p>In addition, other than the plan resubmittal schedule, tables are non-existent in the proposed rule.</p>



November 29, 2016

VIA Email (gomggeis@boem.gov)

Dr. Jill Lewandowski
Chief, Division of Environmental Assessment
Office of Environmental Programs
Bureau of Ocean Energy Management
45600 Woodland Road, VAM-OEP
Sterling, VA 20166

Re: Comments on Draft Programmatic Environmental Impact Statement for Geological & Geophysical Activities on Gulf of Mexico Outer Continental Shelf

Dear Dr. Lewandowski:

This letter provides the comments of the International Association of Geophysical Contractors (“IAGC”), the American Petroleum Institute (“API”), the National Ocean Industries Association (“NOIA”), and the Offshore Operators Committee (“OOC”) (collectively, the “Associations”) in response to the Bureau of Ocean Energy Management’s (“BOEM”) request for comments on the Draft Programmatic Environmental Impact Statement (“DPEIS”) to evaluate potential environmental effects of multiple geological and geophysical (“G&G”) activities on the Gulf of Mexico (“GOM”) Outer Continental Shelf (“OCS”). *See* 81 Fed. Reg. 67,380 (Sept. 30, 2016). We appreciate BOEM’s consideration of the comments set forth below.

I. THE ASSOCIATIONS

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting

environmental requirements, while economically developing and supplying energy resources for consumers.

NOIA is the only national trade association representing all segments of the offshore industry with an interest in the exploration and production of both traditional and renewable energy resources on the United States OCS. NOIA's membership comprises more than 325 companies engaged in a variety of business activities, including production, drilling, engineering, marine and air transport, offshore construction, equipment manufacture and supply, telecommunications, finance and insurance, and renewable energy.

OOC is an organization of 47 producing companies and 61 service providers to the industry who conduct essentially all of the OCS oil and gas exploration and production activities in the GOM. Founded in 1948, the OOC is a technical advocate for the oil and gas industry regarding the regulation of offshore exploration, development, and producing operations in the GOM.

By submitting this letter, the Associations do not intend to limit the ability of their individual member companies to submit separate comments or present their own views on the issues discussed herein.

II. OVERVIEW

The GOM OCS is a significant source of oil and gas for the Nation's energy supply. In 2014, the GOM OCS region was responsible for 16% of the total United States crude oil production and 5% of dry natural gas production.¹ Likewise, GOM OCS leases are an important source of federal revenues, generating substantial bonuses, rentals, and royalties paid to the United States. Since 2008, lessees have paid over \$11 billion in bonus bids for lease sales in the GOM OCS.² Total oil and gas royalty revenues from the GOM OCS amounted to almost \$5 billion in fiscal year 2015 alone.³ Moreover, BOEM has recently estimated the net economic

¹ See U.S. Energy Information Administration, *Gulf of Mexico Fact Sheet* (June 22, 2016), http://www.eia.gov/special/gulf_of_mexico/data.cfm (last visited Nov. 27, 2016).

² See BOEM, *Outer Continental Shelf Lease Sale Statistics, Gulf of Mexico Oil and Gas Lease Offerings* (Dec. 31, 2015), <http://www.boem.gov/Outer-Continental-Shelf-Lease-Sale-Statistics/> (last visited Nov. 27, 2016).

³ See DOI, Office of Natural Resources Revenue, Statistical Information, <http://statistics.onrr.gov/ReportTool.aspx> (Reported Revenues [Single Year Only], FY2015, Accounting Year, Federal Offshore, Offshore Gulf) (last visited Nov. 27, 2016).

value of future GOM leasing to be as high as \$197 billion.⁴ As described in detail below, G&G activities are crucial to the discovery, development, and valuation of OCS resources that lead to such production.

The Outer Continental Shelf Lands Act (“OCSLA”) calls for the “expeditious and orderly development” of the OCS “subject to environmental safeguards.” 43 U.S.C. § 1332(3). However, in many ways, the DPEIS undermines OCSLA’s mandate and is legally and technically flawed. In general, a fundamental flaw with the DPEIS is its establishment of an unrealistic scenario in which G&G activities are projected to result in supposed effects to marine mammals that BOEM admits are unrealistic overestimates of impact. The supposed adverse effects of this worst case hypothetical scenario are then addressed in the DPEIS with burdensome and unsupported mitigation measures. This approach is contrary to both the best available scientific information and applicable law.

For over 40 years, the federal government and academic scientists have studied the potential impacts of G&G activities on marine mammals, and have concluded that any such potential impacts are insignificant. Indeed, this conclusion has been publicly reaffirmed by BOEM (*see* Section III.B.3 *infra*) and the DPEIS fails to present any evidence to counter this well-supported and longstanding conclusion. The DPEIS’s suggestion that such impacts are “moderate” (as opposed to insignificant) is not supported by the best available science and is made possible only by application of overly conservative estimates that BOEM admits do not accurately reflect the actual anticipated impacts.

In addition, many of the mitigation measures recommended in certain alternatives presented in the DPEIS are economically and operationally infeasible, will impose serious burdens on industry, and are highly unlikely to result in benefits to protected species. The Associations can and will support mitigation measures that are grounded in the best available science and consistent with existing practices that are proven to be effective and operationally feasible. However, we cannot support mitigation measures with no basis in fact or science, which are intended to address presumed adverse effects that will not occur, and which will result in less exploration of the OCS, contrary to OCSLA.

We also wish to clarify at the outset the relevance of the settlement agreement and subsequent stipulation that were entered into by the parties in *NRDC et al. v. Jewell et al.*, No. 2:10-cv-01882 (E.D. La.) (“*NRDC v. Jewell*”). *See id.* at Dkt. 118-2 (“Settlement Agreement”); *id.* at Dkt. 127-2 (“Stipulation to Amend”). The Settlement Agreement and the Stipulation to Amend were expressly agreed to for the sole purpose of settling litigation. The mitigation measures currently implemented through the terms of those agreements are not representative of

⁴ *See* BOEM, *2017-2022 OCS Oil and Gas Leasing Proposed Final Program*, at Table 5-8 (BOEM, Nov. 2016), <https://www.boem.gov/2017-2022-OCS-Oil-and-Gas-Leasing-PFP> (last visited Nov. 27, 2016).

measures that have been traditionally employed in the GOM. Moreover, the parties to the Settlement Agreement and the Stipulation to Amend did not agree, and there has otherwise been no subsequent demonstration, that the mitigation measures imposed through those documents are feasible, appropriate, or supported by the best available science.⁵

Lastly, the economic analysis included in the DPEIS is inadequate, particularly regarding the assumptions made about activity levels in the face of overly restrictive mitigation measures. The analysis appears to completely ignore the potential of reduced future drilling and production resulting from the generation of less G&G data. In addition, although the DPEIS describes the potential economic impacts of the various alternatives, it provides no cost estimates for direct, indirect, and induced economic impacts over the 10-year time period covered by the DPEIS. Nor does it adequately account for the variability inherent in offshore oil and natural gas exploration and development. In short, BOEM has failed to provide an economic impact analysis that allows stakeholders to meaningfully assess the practicability or feasibility of the proposed alternatives.

Our detailed comments on the DPEIS are set forth in Section III below. As to the alternatives presented in the DPEIS, the Associations find Alternative A to be the most reasonable because it presents the option that is most consistent with the best available science, operational feasibility, and applicable law. We strongly object to Alternatives B-G, for the reasons stated below. We look forward to working with BOEM as it proceeds with this National Environmental Policy Act (“NEPA”) review and selects the preferred alternative for the final PEIS. Although we encourage BOEM to issue the final PEIS on a schedule that is compliant with court-ordered deadlines, it must do so in a manner that produces a final PEIS that does not contain the inadequacies described in the following comments.

III. COMMENTS

A. The DPEIS Must Address OCSLA’s Mandates and Take Account of the Environmental Benefits of the Proposed Action

Congress enacted OCSLA to promote and ensure the “expedited exploration and development of the [OCS] in order to achieve national economic and energy policy goals, assure

⁵ See *NRDC v. Jewel*, Dkt. 118-2, Section IX (“Intervenor-Defendants do not agree that all of the measures described in paragraph IX.A and IX.B are feasible or appropriate. Intervenor-Defendants shall be free to challenge any such measures should one or more of the Federal Defendants develop and implement them.”); *id.* at Dkt. 127-2, Section G (“The terms of this Stipulation have been agreed to for purposes of compromise. No party concedes by entering into this Stipulation that any of the permit requirements described above are warranted by scientific evidence or should be imposed after the Stay expires, or that these requirements are sufficient to achieve legal compliance or reduce biological risk over the long term.”).

national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade.” 43 U.S.C. § 1802(1); *see also id.* § 1332(3) (the OCS “should be made available for expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs”). Indeed, Congress expressly intended to “make [OCS] resources available to meet the Nation’s energy needs as rapidly as possible.” *Id.* § 1802(2)(A); *see California v. Watt*, 668 F.2d 1290, 1316 (D.C. Cir. 1981) (OCSLA’s primary purpose is “the expeditious development of OCS resources”). “The first stated purpose of OCSLA, then, is to establish procedures to expedite exploration and development of the OCS. The remaining purposes primarily concern measures to eliminate or minimize the risks attendant to that exploration and development. Several of the purposes, in fact, candidly recognize that some degree of adverse impact is inevitable.” *Watt*, 668 F.2d at 1316. Here, the G&G activities evaluated in the DPEIS are authorized by BOEM pursuant to OCSLA. *See* 43 U.S.C. § 1340. Accordingly, OCSLA provides the substantive statutory mandates governing the alternatives addressed in the DPEIS.⁶

Seismic surveying has been and continues to be essential to achieving OCSLA’s goals because it is the only feasible technology available to accurately image the subsurface before a single well is drilled. Industry has made significant improvements in acquisition efficiency in recent years. Using standard hardware (airguns), we now acquire more and better quality data due to advancements in vessels, configurations, acquisition planning and execution, and data processing. Additional advancements in geophysical technology—including seismic reflection and refraction, gravity, magnetics, and electromagnetics—afford industry significant precision in subsurface imaging and will continue to provide more realistic estimates of potential resources. By utilizing these tools and applying increasingly accurate and effective interpretation practices, industry can better locate and dissect prospective areas for exploration.

Furthermore, modern seismic imaging reduces risk by increasing the likelihood that exploratory wells will successfully tap hydrocarbons and by decreasing the number of wells that need to be drilled in a given area, thereby reducing associated safety and environmental risks and the overall environmental footprint for exploration. For example, subsurface imaging can predict

⁶ *See Nat. Res. Def. Council, Inc. v. Pena*, 972 F. Supp. 9, 18 (D.D.C. 1997) (alternatives evaluated in an EIS are “heavily influenced by the agency’s consideration of the views of Congress, expressed, to the extent the agency can determine them, in the agency’s statutory authorization act, as well as in other congressional directives” (quotation omitted)); *see also City of Alexandria, Va. v. Slater*, 198 F.3d 862, 867 (D.C. Cir. 1999) (“the goals of an action delimit the universe of the action’s reasonable alternatives” (quotation omitted)); *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1121 (9th Cir. 2002) (Forest Service is “not required under NEPA to consider alternatives . . . that were inconsistent with its basic policy objectives”); *Westlands Water Dist. v. U.S. Dep’t of the Interior*, 376 F.3d 853, 866 (9th Cir. 2004) (“Where an action is taken pursuant to a specific statute, the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS.”).

potentially hazardous over-pressurized zones in a reservoir and thus allow an operator to better design a well to reduce its associated types and levels of risk. As technology continues to advance, the geophysical industry can continue to reduce drilling risk and increase potential production. Just as physicians today may use MRI technology to image an area that previously had been imaged by X-ray technology, geophysical experts are actively using and enhancing the most modern technology to make improved evaluations. Moreover, because survey activities are temporary and transitory, seismic surveying is the least intrusive and most cost-effective means to determine the likely locations of recoverable oil and gas resources in the GOM.⁷

G&G activities are therefore essential to both the “expeditious and orderly development” of OCS resources and the implementation of “environmental safeguards.” 43 U.S.C. § 1802(2)(A). However, the DPEIS provides no meaningful discussion of OCSLA’s mandates and specifically fails to show how each of the proposed alternatives is consistent with those mandates. Indeed, as demonstrated below, some of the alternatives undermine OCSLA’s mandates by imposing measures that will render important current and future exploration and development activities economically or operationally infeasible. In addition, the DPEIS does not meaningfully address the environmental benefits of G&G activities and, accordingly, fails to “adequately set[] forth sufficient information to allow the decisionmaker to consider alternatives and make a reasoned decision after balancing the risks of harm to the environment against the benefits of the proposed action.”⁸ In sum, well-established NEPA law requires BOEM to fully consider the statutory authority for the proposed action as well as all of the environmental benefits of the proposed action.

B. The DPEIS’s Marine Mammal Effects Analysis for Seismic Activities Is Seriously Flawed and Unsupported

The DPEIS concludes—for each alternative—that the effects of sound from project-related seismic surveys on marine mammals are “expected to be moderate, as potential exposures of marine mammals are expected to be extensive (potentially affecting large numbers of

⁷ Seismic air sources remain the most effective, commercially available technology to obtain necessary, accurate sub-surface data. While alternative technologies, including marine vibroseis, continue to be explored, such technology is not yet commercialized and has not yet been shown to provide comparable seismic data quality. The substantial cost to modify vessels and to use vibroseis requires a significant market to make the technology commercially viable. Moreover, the hypothetical environmental benefits of alternative technologies have not been demonstrated.

⁸ *Friends of the Boundary Waters Wilderness v. Dombeck*, 164 F.3d 1115, 1128 (8th Cir. 1999) (emphasis added); see also *Coal. for a Livable Westside v. U.S. Postal Serv.*, No. 99-cv-10873, 2000 WL 1264256, at *3 (S.D.N.Y. Sept. 7, 2000) (EIS must assess “the environmental benefits and detriments of the proposed action”).

individuals within areas of the AOI)...” DPEIS at 4-60. The Associations strongly disagree with this conclusion because it has no support in fact, science, or law. Specifically, as set forth below, this conclusion is erroneous because it (i) is derived from an unlawful “worst case analysis” that BOEM admits is not realistic; (ii) ignores the effects of mitigation measures; (iii) relies on biased and flawed technical assumptions and modeling; and (iv) does not consider all of the best available information, including a wealth of data demonstrating that seismic activities have had no detectable adverse impacts on marine mammal populations.

1. The DPEIS Unlawfully Relies on a “Worst Case” Analysis

Prior to 1986, NEPA regulations required a lead agency to prepare a “worst case analysis” of impacts for which there is incomplete or unavailable information. *See* 51 Fed. Reg. 15,618 (Apr. 25, 1986). However, this requirement was expressly rescinded decades ago because it was found to be “an unproductive and ineffective method of achieving [NEPA’s] goals; one which can breed endless hypothesis and speculation.” *Id.*; *see Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 354-56 (1989) (U.S. Supreme Court confirming that worst case analysis is no longer applicable).

In place of the worst case analysis requirement, the federal Council on Environmental Quality (“CEQ”) promulgated “a wiser and more manageable approach to the evaluation of reasonably foreseeable significant adverse impacts in the face of incomplete or unavailable information in an EIS.” 51 Fed. Reg. at 15,620. The new (and current) approach requires federal lead agencies to disclose such impacts and perform a “carefully conducted” evaluation based upon “credible scientific evidence.” *Id.*; *see* 40 C.F.R. § 1502.22(b)(1). In developing this requirement, CEQ explained that “credible” means “capable of being believed” and stated that “[i]nformation which is unworthy of belief should not be included in an EIS.” 51 Fed. Reg. at 15,622-23 (emphasis added).

However, by BOEM’s admission, the DPEIS presents an unrealistic worst case assessment of the potential effects of seismic activities on marine mammals that is purposefully constructed to overestimate levels of projected adverse effects. Specifically, the effects analysis is based solely on modeling (Appendix D) that “creates an estimate of the potential number of animals exposed to the sounds.” DPEIS at 1-16. BOEM explains:

This estimate alone does not reflect BOEM’s determination of the actual expected physical or behavioral impacts to marine mammals but rather an overly conservative upper limit because none of the mitigations examined in this Programmatic EIS were modeled. Biological significance to marine mammals is left to interpretation by the subject-matter experts.

Id. (emphasis added). “Biological significance” is not further evaluated or considered in the DPEIS even though, as addressed below, relevant information is available. This is a particularly arbitrary error because it results in a DPEIS that does not evaluate the actual effects that are

anticipated to be “caused by the action” or that are “reasonably foreseeable.” 40 C.F.R. § 1508.8 (definitions for “direct” and “indirect” effects).

Additionally, the exposure estimates themselves “are based on acoustic and impact models that are, by their nature, conservative and complex.” DPEIS at 1-19. Indeed, “[e]ach of the inputs into the models is purposely developed to be conservative, and this conservativeness accumulates throughout the analysis.” *Id.* (emphasis added). As a result, the exposure estimates are “higher than BOEM expects would actually occur in a real world environment.” *Id.*; *id.* at 1-20 (“This estimate does not reflect an actual expectation that marine mammals will be injured or disturbed. It is an overly conservative estimate.”). BOEM further admits that using the exposure models as a basis for the effects analysis “requires accepting a worst-case scenario, which ultimately overestimates the numbers of ‘take’ under the [Marine Mammal Protection Act (“MMPA”)] by equating those numbers with the exposures identified in the modeling rather than real world conditions.” *Id.* (emphasis added).

The Associations appreciate BOEM’s candor in providing accurate descriptions of the substantial shortcomings of the exposure modeling. However, such candor does not excuse BOEM from performing a lawful evaluation of the actually anticipated direct and indirect effects of the proposed action. As stated above, both direct and indirect effects must be “caused by” the action, and indirect effects must be “reasonably foreseeable.” 40 C.F.R. § 1508.8. By BOEM’s admission, the exposure estimates presented in the DPEIS do not accurately represent effects that BOEM expects to be “caused by” the proposed action or that are “reasonably foreseeable.” Aside from being contrary to NEPA requirements, BOEM’s inappropriate reliance on a worst case scenario to estimate marine mammal impacts could present challenges for the National Marine Fisheries Service (“NMFS”) should NMFS decide to rely on a similarly flawed analysis when issuing incidental take regulations under the MMPA.

Moreover, by performing an effects analysis that is “purposely developed to be conservative,” based on the highest sound levels and erroneously high marine mammal densities, and purposely intended to overestimate adverse effects, BOEM has performed precisely the type of “worst case analysis” that was rejected by both CEQ and the U.S. Supreme Court many years ago. By its terms, and as expressly stated in the DPEIS, the analysis of marine mammal impacts is intentionally designed to be inaccurate and to evaluate the worst possible consequences that could hypothetically result from unmitigated seismic surveying. It is hard to imagine an analysis that presents a scenario worse than the thousands to millions of incidental exposures that are predicted by the DPEIS.

In sum, the DPEIS’s analysis of marine mammal effects is plainly not credible; it evaluates effects that, by BOEM’s admission, will not occur, and, therefore, it is “unworthy of belief.” 40 C.F.R. § 1502.22(b)(1); 51 Fed. Reg. at 15,622-23. The DPEIS violates NEPA because it relies exclusively on a “worst case” analysis of seismic impacts on marine mammals, contrary to well-established law.

2. The DPEIS's Marine Mammal Effects Analysis for Seismic Activities Lacks Scientific Integrity and Relies on Inaccurate Assumptions

An EIS must rely upon “high quality” information and “accurate scientific analysis.” 40 C.F.R. § 1500.1(b); *Conservation Nw. v. Rey*, 674 F. Supp. 2d 1232, 1249 (W.D. Wash. 2009); *Env'tl. Def. v. U.S. Army Corps of Eng'rs*, 515 F. Supp. 2d 69, 78 (D.D.C. 2007) (“Accurate scientific analysis [is] essential to implementing NEPA.”). It also must have “professional integrity, including scientific integrity” and may not rely on “incorrect assumptions or data” or “highly speculative harms” that “distort[] the decisionmaking process.” See *Theodore Roosevelt Conservation P'ship v. Salazar*, 616 F.3d 497, 511 (D.C. Cir. 2010); 40 C.F.R. § 1502.24; 73 Fed. Reg. 61,292, 61,299 (Oct. 15, 2008) (CEQ regulations require “high quality” information and “scientific integrity”).⁹ To be sure, courts have invalidated EISs that did not meet these standards, that were based on “stale scientific evidence . . . and false assumptions,” or that failed to disclose the “potential weakness” of relied-upon modeling. See, e.g., *Seattle Audubon Soc'y v. Espy*, 998 F.2d 699, 704 (9th Cir. 1998); *Or. Nat. Res. Council Fund v. Goodman*, 505 F.3d 884, 897 (9th Cir. 2007). As set forth below, the DPEIS fails to meet these rigorous standards because it wrongly omits any consideration of mitigation measures and relies on flawed and biased modeling.

a. The effects analysis improperly ignores mitigation measures

NEPA requires an EIS to address “any adverse environmental effects which cannot be avoided,” which necessitates an analysis of available mitigation measures. 42 U.S.C. § 4332(C)(ii) (emphasis added); see *Robertson*, 490 U.S. at 351-52, 353. However, the DPEIS turns this statutory mandate on its head by evaluating speculative adverse effects that can be (and are already being) avoided through the implementation of mitigation measures. In fact, these mitigation measures are an integral part of the proposed actions evaluated in the DPEIS. See, e.g., DPEIS at 1-3, 1-4 (proposed action includes BOEM authorizations of G&G activities and NMFS incidental take authorizations, both of which must include mitigation measures). Nonetheless, the DPEIS expressly declines to evaluate the countervailing beneficial effects of the very mitigation measures that are integral to the proposed actions. See DPEIS at 1-16 (“The modeling is conservative because it did not apply any of the 19 different mitigations analyzed in [the DPEIS].”); *id.* at 1-19 (“The modeling effort in Appendix D does not, for example, take into account any mitigation measures incorporated into the alternatives because the effect of those measures cannot be quantified with statistical confidence at this time.”); *id.* at 4-14 (mitigation measures not considered as part of effects analysis).

⁹ See also *CBD v. BLM*, 937 F. Supp. 2d 1140, 1155 (N.D. Cal. 2013) (principle that reasonably foreseeable environmental effects may not include “highly speculative harms” is equally applicable to direct and indirect effects); *Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 964 (9th Cir. 2005); *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005).

BOEM's election to ignore the beneficial effects of mitigation measures is particularly arbitrary because BOEM knows—unconditionally—that the mitigation measures would substantially decrease any adverse effects postulated by the overly conservative exposure modeling. As addressed below, there are no demonstrated adverse effects on any marine mammal populations (in the GOM or the Arctic) resulting from mitigated seismic survey activities. In addition, Appendix D itself demonstrates the effectiveness of currently employed mitigation measures. Specifically, in Phase I of the exposure modeling described in Appendix D where various modeling methods, inputs, and assumptions are assessed, Sections 6.5.3 and 6.5.4 consider the effects of incorporating mitigation measures and aversive responses into the exposure modeling. Tables 40 and 44 show that the implementation of shutdowns may reduce the number of estimated Level A exposures by 10% to 80%.¹⁰ Similarly, the effect of modeling aversive responses by marine mammals also shows potentially large reductions in the percentages of animals exposed above Level A criteria (40% to 85% for the peak sound pressure level [“SPL”] criteria and 14% to 20% for the root-mean-square [“rms”] SPL).

Despite these demonstrations of significant and meaningful reductions in the number of estimated exposures as a result of mitigation measures and aversive responses, and the fact that both are likely to occur under all of the alternatives considered in the DPEIS, they are inexplicably not included in the final (Phase II) modeling used to estimate exposures for the impact assessments and ultimately not considered as part of the effects analysis. Although there are uncertainties associated with including these measures in the modeling process, those uncertainties are not substantially different than uncertainties associated with other inputs to the modeling process and they should not be disqualified from use for that reason.

BOEM's refusal to incorporate the known benefits of mitigation measures, many of which are standard best practices that the seismic industry already implements, is arbitrary, unsupported, and contrary to well-established NEPA principles.¹¹ An agency cannot simply ignore certain effects of an action because they “cannot be quantified with statistical confidence” (DPEIS at 1-19), particularly when it chooses not to ignore admittedly incorrect assumptions that inaccurately estimate impact levels. This is the very definition of “arbitrary and capricious” agency action. Rather, BOEM must evaluate all reasonably foreseeable effects that will be caused by the proposed action, including the offsetting effects of mitigation measures, perform a

¹⁰ The effectiveness of mitigation varies by species as it is related to the probability of detecting each species; however, those species that form large groups and/or are most abundant are the ones for which mitigation is most effective. Thus, the percent reduction in estimated exposures is likely greatest for the species with the highest absolute estimated exposures.

¹¹ These standard best practices are the mitigation measures that have been employed for many years in the GOM under Joint Notice to Lessees (“NTL”) No. 2016-G02 (previously NTL No. 2012-G02 and NTL No. 2007-G02) and are represented in Alternative A. In this comment letter, we refer to these measures as the “Standard Mitigation Measures.”

high quality and accurate assessment of those effects, and reach reasoned conclusions regarding the effects that are likely to occur.

b. The effects analysis is arbitrarily biased to unrealistic scenarios that are unsupported by actual data

The exposure modeling set forth in Appendix D makes many biased assumptions that substantially contribute to the inaccuracy of the DPEIS's effects analysis. Specifically, the modeling analysis in Appendix D contains multiple layers of precaution that aggregate in the annual and 10-year estimates. Attachment A to this letter provides a more detailed assessment of the overly conservative (*i.e.*, unrealistic) assumptions used in the modeling. These assumptions contribute anywhere from 10% to multiple orders of magnitude above the mean or most likely exposures outcome (*i.e.*, 100 to 1,000 times the "most likely" number of exposures). In aggregate, these compounding highly conservative assumptions produce a predicted number of exposures that is thousands to millions of times greater than the average or most likely outcome.

For example, the Phase II model assumes a source array of 8,000 cubic inches. This is at, or very near, the upper limit of the largest source arrays used in the GOM. *See* DPEIS at 3-18, Appx. D at D-25. The actual distribution of array sizes in the GOM ranges from 8,400 cubic inches to less than 2,000 cubic inches, with a mean value of 5,600 cubic inches. The scaling differences in the range to threshold criteria produced by an overestimated array size of 8,000 cubic inches cascade down through the calculations, so that when a threshold range four times larger than produced by a typical survey source is established using hearing injury thresholds 10 or a hundred times lower than actual measured thresholds, and applied to numbers of animals (using the Duke model) that are 10 times higher than any previous estimates, the outcome is a prediction that 10,000 to 100,000 times more exposures might occur than use of the "best available data" values might otherwise have calculated. *See Attachment A*. Instead of this overly precautionary and unrealistic approach, BOEM could have used the data for all array sizes used in the GOM in the past 10 or 20 years, plotted them on a typical bell-shaped curve, and calculated the mean or median and variance or mode.

Another example of excess precaution built into BOEM's effects analysis is found in the values entered into the transmission loss model. On pages D-100 through D-123 of Appendix D, the analysis acknowledges that (1) the "worst case" sound speed profile produces propagation at a given range that is 10 decibels ("dB") better than the average; (2) the actual-versus-modeled bathymetry and bottom properties probably add another 4 dB; and (3) using a smooth rather than wavy ocean surface might add another 1-2 dB over the actual transmission loss. In aggregate, an added 16 dB or so of "precautionary assumptions" translates to sound propagation that would travel more than 10 times farther than the result that would be produced by the "most likely" propagating environment (using a typical hybrid transmission loss value of $15\log(R)$). Again, this single example is combined with other examples of precaution to predict exposure numbers that are thousands to millions of times higher than the most likely outcomes.

Yet another example occurs where the effects of running the animat exposure models for only 24 hours and then scaling those results up to longer survey periods (*e.g.*, 30 days) are assessed in Section 6.5.1. Using this method, the total exposure estimates based on the rms SPL criteria are found to vastly “overestimate the number of animats exposed to levels exceeding threshold....” DPEIS, Appx. D at D-69. Nonetheless, this method is used in Phase II (App. D at D-180) to produce the final exposure estimates (App. D Section 7.3.4).

Section 6.5.2 analyzes potential contributions to uncertainty from the sound source characterization modeling, and from sound speed profiles, geoacoustic parameters, bathymetric data, and sea state inputs to the acoustic propagation modeling. This analysis concludes that the various uncertainties in the acoustic field represent a “multi-dimensional envelope” and that these different dimensions “cannot be summed to yield a ‘total’ uncertainty as this would be a meaningless quantity.” However, this conclusion is incorrect. There are ways to quantify the uncertainty in a meaningful way despite challenges to directly calculating the total uncertainty (or statistical variance). For example, the combined uncertainty contributed by environmental and model parameters could be further evaluated by comparing the outputs from multiple runs of the entire modeling process (both acoustic propagation modeling and exposure modeling) in which one or more of the parameters are adjusted across reasonable levels in each competing model run. The parameter-specific uncertainty analyses presented in Phase I of Appendix D are useful for identifying which parameters to adjust within the competing full modeling runs, but alone they only reinforce the fact that significant uncertainty is present at many steps within the modeling process. Multiple runs of the full modeling process using alternative parameter estimates should be conducted to improve the understanding of the total uncertainty surrounding the final results.

In addition, the analyses set forth in Section 6.5.2 of Appendix D use various methods to assess uncertainty around the parameters used in acoustic propagation modeling. However, in all examples only the “typical” (average or median) and “worst case” values are evaluated. As a result, uncertainties are only characterized in one direction from the typical or expected result, and that direction results in longer-range propagation of sounds. When characterizing uncertainty around estimates, it is common practice to not only report the upper confidence limits (“worst case” results in this example), but to also report the lower confidence limits. Without an understanding of the lower confidence limit values, it is not possible to properly bound and assess the range of outcomes from the modeling and interpret the likelihood of potential impacts. The failure to characterize the lower confidence limits results in a flawed and arbitrary analysis that is significantly biased. BOEM summarizes the significant biases of the modeling as follows:

The existing modeling largely does not account for uncertainty in the data inputs and also selects highly conservative data inputs. This bias often produces unrealistically high exposure numbers and “takes” that exponentially increase uncertainty throughout each step of the modeling. The modeling does not incorporate

mitigation or risk reduction measures designed to limit exposure. The modeling is an overestimate and should be viewed with that understanding.

DPEIS at 4-47 (emphases added).

An analysis that, by the agency's admission, purposely overestimates effects and relies upon incorrect and unrealistic assumptions, is, by definition, "inaccurate" and therefore contrary to applicable NEPA standards. *See* 40 C.F.R. § 1500.1(b) (requiring "accurate scientific analysis"). Moreover, the DPEIS's analysis of marine mammal impacts is, at best, "highly speculative" because it is based on scenarios and assumptions that, by BOEM's admission, are not accurate and will not occur. For these additional reasons, the analysis of the effects of seismic activities in the DPEIS is arbitrary and violates NEPA.

3. The Marine Mammal Effects Analysis Does Not Consider the Best Available Information

As addressed above, and in Attachment A, the analysis of potential effects of seismic activities on marine mammals is based on overly conservative, unrealistic, and biased modeling of "exposures." Aside from the flaws with this approach, there is a wealth of available information that actually informs the analysis of the reasonably foreseeable effects caused by seismic activities. These data are either minimized or not addressed at all in the DPEIS. BOEM must consider this available information to assess the biological significance of the exposure estimates. Without any assessment of biological significance, the exposure estimates are entirely uninformative and misleading.

First, BOEM goes to great lengths to assert, correctly, that exposures are not necessarily incidental takes. *See, e.g.*, DPEIS at 1-15. In the same paragraph, however, BOEM contradicts itself by stating, without support, that it expects that the "majority of exposures" are likely to result in takes. *Id.* at 1-15, 1-16. BOEM makes no effort to quantify or otherwise qualitatively address the significance of exposures. As a result, exposures become a de facto surrogate for "takes." *See* DPEIS, Appx. D at D-310-320.

Second, the history of formal assessments of offshore seismic activities demonstrates that levels of actual incidental take are far smaller than even the most balanced pre-operation estimates of incidental take.¹² Indeed, more than four decades of worldwide seismic surveying

¹² *See, e.g.*, BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Eastern Planning Area Lease Sales 225 and 226*, at 2-22 (2013), <http://www.boem.gov/BOEM-2013-200-v1/> ("Within the CPA, which is directly adjacent to the EPA, there is a long-standing and well developed OCS Program (more than 50 years); there are no data to suggest that activities from the preexisting OCS Program are significantly impacting marine mammal populations.");

(continued . . .)

and scientific research indicate that the risk of physical injury to marine life from seismic survey activities is extremely low. Currently, there is no scientific evidence demonstrating any biologically significant negative impacts to marine life from seismic surveying. As stated by BOEM:

To date, there has been no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic

(. . . continued)

BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Western Planning Area (WPA) Lease Sales 229, 233, 238, 246, and 248 and Central Planning Area (CPA) Lease Sales 227, 231, 235, 241, and 247*, at 4-203 (v.1) (2012), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v1.aspx (WPA); *id.* at 4-710 (v.2), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v2.aspx (CPA) (“Although there will always be some level of incomplete information on the effects from routine activities under a WPA proposed action on marine mammals, there is credible scientific information, applied using acceptable scientific methodologies, to support the conclusion that any realized impacts would be sublethal in nature and not in themselves rise to the level of reasonably foreseeable significant adverse (population-level) effects.”); BOEM, *Final Supplemental EIS for Gulf of Mexico OCS Oil and Gas WPA Lease Sales 233 and CPA Lease Sale 231*, at 4-30, 4-130 (2013), http://www.boem.gov/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2013/BOEM%202013-0118.pdf (reiterating conclusions noted above); MMS, *Final Programmatic EA, G&G Exploration on Gulf of Mexico OCS*, at III-9, II-14 (2004), http://www.nmfs.noaa.gov/pr/pdfs/permits/mms_pea2004.pdf (“There have been no documented instances of deaths, physical injuries, or auditory (physiological) effects on marine mammals from seismic surveys.”); *id.* at III-23 (“At this point, there is no evidence that adverse behavioral impacts at the local population level are occurring in the GOM.”); LGL Ltd., *Environmental Assessment of a Low-Energy Marine Geophysical Survey by the US Geological Survey in the Northwestern Gulf of Mexico*, at 30 (Apr.-May 2013), http://www.nmfs.noaa.gov/pr/pdfs/permits/usgs_gom_ea.pdf (“[T]here has been no specific documentation of TTS let alone permanent hearing damage, i.e., PTS, in free-ranging marine mammals exposed to sequences of airgun pulses during realistic field conditions.”); 75 Fed. Reg. 49,759, 49,795 (Aug. 13, 2010) (issuance of IHA for Chukchi Sea seismic activities (“[T]o date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to airgun pulses, even in the case of large airgun arrays.”)); MMS, *Draft Programmatic EIS for OCS Oil & Gas Leasing Program, 2007-2012*, at V-64 (Apr. 2007) (citing 2005 NRC Report), <http://www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Five-Year-Program/5and6-ConsultationPreparers-pdf.aspx> (MMS agreed with the National Academy of Sciences’ National Research Council that “there are no documented or known population-level effects due to sound,” and “there have been no known instances of injury, mortality, or population level effects on marine mammals from seismic exposure”).

activities adversely affecting marine animal populations or coastal communities. This technology has been used for more than 30 years around the world. It is still used in U.S. waters off of the Gulf of Mexico with no known detrimental impact to marine animal populations or to commercial fishing.

In <http://www.boem.gov/BOEM-Science-Note-August-2014/> (*Science Notes*, Aug. 22, 2014); *see also* <https://www.boem.gov/BOEM-Science-Note-March-2015/> (*Science Notes*, Mar. 9, 2015) (there has been “no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic activities adversely affecting animal populations”); DPEIS at 4-57 (“There are multiple factors that indicate that the potential for repeated exposures are unlikely to result in reduced fitness in individuals or populations ... G&G surveys have been ongoing in the northern GOM for many years, with no direct information indicating reduced fitness in individuals or populations.” (emphasis added)).¹³ Moreover, the BOEM Environmental Studies Program has spent more than \$50 million on protected species and sound-

¹³ There are well-documented examples of long-term exposures of acoustically sensitive species where no biologically significant chronic or cumulative impacts have occurred. For example, oil and gas seismic exploration activities have been regularly conducted in the Beaufort and Chukchi Seas of the Arctic Ocean for decades, with regular monitoring and reporting to NMFS under the auspices of MMPA incidental take authorizations issued since the early 1990s. During this lengthy period of acoustic exposures, and despite annual lethal takes by Alaska Natives engaged in subsistence activities, bowhead whales have consistently increased in abundance to the point that they are believed to have reached carrying capacity. *See, e.g.*, 84 Fed. Reg. 25,830, 25,837 (May 1, 2012) (“There is no specific evidence that exposure to pulses of air-gun sound can cause PTS [physical injury] in any marine mammal, even with large arrays of air-guns.”); *id.* at 25,838 (“To date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to air-gun pulses, even in the case of large air-gun arrays.”); *id.* at 25,839 (“Thus, the proposed activity is not expected to have any habitat-related effects on prey species that could cause significant or long-term consequences for individual marine mammals or their populations.”); 75 Fed. Reg. 49,760, 49,795 (Aug. 13, 2010) (“To date, there is no evidence that serious injury, death or stranding by marine mammals can occur from exposure to air-gun pulses, even in the case of large air-gun arrays.”); *see also* Reichmuth, C., Ghoul, A., Sills, J., Rouse, A. and B. Southall. 2016. Low-frequency temporary threshold shift not observed in spotted or ringed seals exposed to single air gun impulses, *J. Acoust. Soc. Am.*, 140: 2646-2658 (“There was no evidence that these single seismic exposures altered hearing – including in the highest exposure condition, which matched previous predictions of temporary threshold shift (TTS) onset The absence of observed TTS confirms that regulatory guidelines (based on M-weighting) for single impulse noise exposures are conservative for seals.”).

related research over more than four decades without finding evidence of adverse effects. See <http://www.boem.gov/BOEM-Science-Note-August-2014/> (*Science Notes*, Aug. 22, 2014) (“Since 1998, BOEM has partnered with academia and other experts to invest more than \$50 million on protected species and noise-related research.”). The geophysical and oil and gas industries, the National Science Foundation, the U.S. Navy, and others have spent a comparable amount of funds on researching potential impacts of seismic surveys on marine life and have found no evidence of significant effects. See http://www.scandoil.com/moxie_issue-bm2/bm.doc/sogm_1-2-16_sml-jip.pdf; www.soundandmarinelife.org. None of this is meaningfully discussed in the DPEIS.

Third, the DPEIS fails to evaluate the accumulated observational data collected by Protected Species Observers (“PSOs”) on survey vessels in the GOM as part of the DPEIS’s effects analysis. This information is relevant to the assessment of marine mammal effects by seismic vessels operating in the GOM. Not surprisingly, the PSO data indicate a negligible level of effects that undermines the results of the exposure modeling presented in Appendix D. For example, the DPEIS implausibly concludes that many thousands of marine mammals will experience incidental take as a result of seismic activities. These estimates would result in tens of thousands of shutdown events per year. However, based on actual monitoring data, as reported in relatively recent environmental assessments, an average of only 55 shutdowns per year occur in the GOM with operations conducted under the Standard Mitigation Measures. See also Barkaszi et al. (2012) (reporting a total of 144 shutdowns from 2002 to 2008, or 24 per year); Attachment B.¹⁴ The PSO data must be fully disclosed and evaluated in the DPEIS and the effects analysis must be substantially revised to account for the available PSO data. See *Gas Appliance Mfrs. Ass’n*, 998 F.2d 1041, 1045 (D.C. Cir. 1993) (“Since the accuracy of any computer model hinges on whether the underlying assumptions reflect reality . . . [t]he agency’s burden [to demonstrate the reasonableness of a model] becomes heavier when a method of prediction is being relied on to overcome adverse actual test data.” (quotations and alteration omitted)).

4. Conclusions—Marine Mammal Effects Analysis

As set forth above, the DPEIS’s analysis of the effects of seismic activities on marine mammals is unrealistic, flawed, incomplete, and unlawful. The effects analysis is almost exclusively based upon a modeling exercise that uses a cascading series of conservatively biased assumptions for all uncertain parameter inputs. These assumptions lead to accumulating bias as the cumulative conservative assumptions add up to increasingly unlikely statistical probabilities not representative of real-world conditions. Consequently, the results quickly become little more

¹⁴ A study of more than a decade’s worth of marine mammal observation data performed by the Joint Nature Conservation Committee (“JNCC”) demonstrates that mitigation measures significantly reduce the effects of seismic activities on marine mammals. The JNCC study’s results should be addressed in the DPEIS. See <http://jncc.defra.gov.uk/page-6985>.

than improbable precautionary worst case scenarios—not fair simulations or representations of likely environmental effects. The DPEIS relies upon this worst case scenario analysis to implausibly conclude that the potential effects of seismic surveying on marine mammals are “moderate”—*i.e.*, “detectable, short-term, extensive, and severe; or ... detectable, short-term or long-lasting, localized, and severe; or ... detectable, long-lasting, extensive or localized, but less than severe.” DPEIS at 4-8.

Aside from being scientifically and legally indefensible, BOEM’s conclusion is not supported by the best available information, which demonstrates that no “long-lasting” or “severe” impacts to marine mammal populations from seismic activities have occurred in the GOM. Indeed, BOEM’s conclusion is not even supported by its own statements. *See* DPEIS at 4-59 (“the best available information, while providing evidence for concern and a basis for continuing research, does not, at this time, provide grounds to conclude that [seismic] surveys would disrupt behavioral patterns with more than negligible population-level impacts” (emphases added)). To make matters worse, the unrealistic scenario presented in the DPEIS is evaluated in a vacuum, with no meaningful consideration of the effectiveness of the mitigation measures that are expressly included in the proposed action. Insofar as we are aware, no seismic activities in the United States OCS have caused impacts amounting to anything more than temporary changes in behavior, without any known injury, mortality, or other biologically significant consequence to any marine mammal species or stocks.¹⁵

In sum, the DPEIS’s finding that seismic activities will cause “moderate” impacts to marine mammals has no factual or scientific support, is contrary to the best available information, and violates NEPA.¹⁶ For the reasons set forth above, the Associations strongly object to this unsupported finding.¹⁷

¹⁵ Additional technical comments are provided in Attachment C to this letter.

¹⁶ The biased and overly conservative effects analysis is the very reason why application of various mitigation measures are supposedly “not sufficient to change the overall impact ratings” (*i.e.*, “moderate” for seismic effects on marine mammals). DPEIS at xxii. The effects analysis is so flawed that the results it produces are meaningless and non-specific, providing no basis for comparison among the alternatives. *See NRDC v. U.S. Forest Serv.*, 421 F.3d 797, 811 (9th Cir. 2005) (“Where the information in the initial EIS was so incomplete or misleading that the decisionmaker and the public could not make an informed comparison of the alternatives, revision of an EIS may be necessary to provide a reasonable, good faith, and objective presentation of the subjects required by NEPA.”).

¹⁷ The Associations’ position that there are currently no demonstrated adverse effects from seismic surveys on marine mammal populations does not preclude our taking a proactive and environmentally responsible approach by actively investigating legitimate concerns raised by subject matter authorities, and doing so in the best traditions of independent, peer-reviewed

(continued . . .)

C. Certain Mitigation Measures Are Infeasible, Unsupported, and Unnecessary

The record demonstrates that the Standard Mitigation Measures, as applied to offshore operations in the GOM, are already more than adequate to protect marine mammals, sea turtles, and fish species in a manner consistent with federal laws.¹⁸ Despite this record, the DPEIS recommends certain mitigation measures that have never been required for offshore exploratory operations in the United States, and that are more stringent (and less supported) than the measures that have already been successfully implemented. Many of the unprecedented measures recommended in the DPEIS are a direct result of BOEM's flawed impact assessments. As described above, the DPEIS creates a hypothetical worst case scenario for marine mammal impacts, determines that the projected adverse effects in that scenario will be substantial, and then recommends mitigation measures to address those supposed effects. However, because the adverse effects identified in the DPEIS are inaccurate and unrealistic, some of the mitigation measures intended to address those effects are similarly flawed and without support.

The unwarranted and arbitrary mitigation measures are addressed in detail below. Without question, these measures, if implemented, will have substantial adverse effects on offshore geophysical operations and substantial economic impacts. These measures will also result in increased survey duration, which, in turn, can increase the potential exposure of marine mammals to sound from seismic surveys and the potential for interference with other users of the

(. . . continued)

scientific study. See E&P Sound and Marine Life Joint Industry Programme ("JIP"), www.soundandmarinelife.org).

¹⁸ See *supra* note 12; see also Mary Jo Barkaszi et al., *Seismic Survey Mitigation Measures and Marine Mammal Observer Reports* (2012); A. Jochens et al., *Sperm Whale Seismic Study in the Gulf of Mexico: Synthesis Report*, at 12 (2008) ("There appeared to be no horizontal avoidance to controlled exposure of seismic airgun sounds by sperm whales in the main SWSS study area."); 78 Fed. Reg. 11,821, 11,827, 11,830 (Feb. 20, 2013) ("it is unlikely that the proposed project [a USGS seismic project] would result in any cases of temporary or permanent hearing impairment, or any significant non-auditory physical or physiological effects"; "The history of coexistence between seismic surveys and baleen whales suggests that brief exposures to sound pulses from any single seismic survey are unlikely to result in prolonged effects."); 79 Fed. Reg. 14,779, 14,789 (Mar. 17, 2014) ("There has been no specific documentation of temporary threshold shift let alone permanent hearing damage[] (i.e., permanent threshold shift, in free ranging marine mammals exposed to sequences of airgun pulses during realistic field conditions."); 79 Fed. Reg. 12,160, 12,166 (Mar. 4, 2014) ("To date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to air gun pulses, even in the case of large air gun arrays.").

GOM.¹⁹ We therefore strongly urge BOEM to adopt only the mitigation measures set forth in Alternative A.²⁰

1. Seasonal restriction for coastal waters

Alternatives C-F include a seasonal restriction for seismic surveys for all coastal waters, federal and state, shoreward of the 20 meter isobath from February 1 to May 31. However, this proposed restriction is unsupported for a number of reasons, as set forth below. For these reasons, we request that the seasonal restriction be eliminated from Alternatives C-F.

First, the Settlement Agreement restricts operation of airguns within federal coastal waters shoreward of the 20 meter isobath from March 1 to April 30, and the stipulation to extend the Settlement Agreement extended the closure from January 1 to April 30 to a smaller area within the unusual mortality event (“UME”) (Texas/Louisiana border to Franklin County, Florida).²¹ It is unclear to us how BOEM derived the four-month February 1 to May 31 restriction used in Alternatives C-F and why it has proposed to include all nearshore coastal waters. No explanation is provided in the DPEIS.²²

Second, the rationale originally offered by the plaintiff parties to the Settlement Agreement for the nearshore restriction was in response to coastal bottlenose strandings and mortalities (*i.e.*, the Northern GOM UME). However, the UME has since been closed. *See* http://www.nmfs.noaa.gov/pr/health/mmume/cetacean_gulfofmexico.htm. Moreover, none of the strandings or deaths in the UME have been attributed to deep penetration seismic survey activities. Instead, recent research demonstrates that seismic impulses at even higher thresholds fail to induce even temporary threshold shifts (“TTS”) in dolphin hearing (Finneran J.J., et al. 2015). Accordingly, no relevant scientific evidence supports a further restriction of deep

¹⁹ The mitigation measures also increase the amount of time the vessel spends surveying because shutdowns and delays necessarily result in overall increased surveying time to preserve data quality and integrity.

²⁰ On a positive note, we commend BOEM for not including a 60-minute “all clear” period in the DPEIS. We also commend BOEM for apparently not including any shutdown requirements for dolphins or sea turtles. *See* DPEIS, Section 2.11.1. These are flawed measures that were inappropriately included in the PEIS for Atlantic OCS G&G activities.

²¹ We also object to the seasonal restriction set forth in Alternative B, which is based upon the Settlement Agreement, for the reasons explained in this subsection.

²² The analysis of the coastal restrictions on page 4-90 appears to incorrectly assume that, during the 10-year period covered by the DPEIS, there would be a “2 month per year restriction”—not the four-month per year restriction that is proposed.

penetration seismic surveys, let alone suggests that such a restriction would result in any meaningful benefit to coastal bottlenose dolphin populations.²³

Third, another rationale for the nearshore restriction was that seismic activity is an additional stressor to an already stressed bottlenose dolphin population in the UME, and that such additional stress may impact dolphin breeding rates. However, there is no evidence that sound from deep penetration seismic surveys is a stressor to coastal bottlenose dolphin populations or contributes in any way to dolphin late-term pregnancy complications or perinatal and postnatal responses that would lead to increased calf mortality, or UMEs (Litz et al. 2014; Venn-Watson et al. 2015).

Fourth, there are unleased blocks within the area covered by the seasonal restriction stated for Alternatives B-F. Because existing seismic data in these areas is outdated and inadequate to inform decisions regarding future lease sales, such a restriction would significantly impede industry's and BOEM's evaluation of blocks for planned future lease sales. Moreover, given the amount of time required to acquire additional seismic data, any extension of the existing seasonal exclusion period significantly increases the likelihood that an affected deep penetration seismic survey cannot be completed within its one-year permit term, thereby increasing the overall number of surveys that will need to be conducted.²⁴

2. Reduced activity levels

In Alternative E, BOEM proposes to reduce levels of deep-penetration, multi-client seismic activities by either 10% or 25%. This measure would be a "Gulfwide strategy designed to reduce overall exposures and sound levels," the stated purpose of which is to "reduc[e] protected species cumulative sound exposures because a reduced number of surveys would be

²³ There are no data to suggest that sound is a problem for the bottlenose dolphin population in general or the mother-calf pairs in particular, and it is equally, if not more, plausible that the animals are completely unaffected by the sound. The fact that these populations may be affected by coastal pollution, vessel traffic in the estuaries, or endemic diseases is not a basis for restricting an activity that has no demonstrated adverse effect.

²⁴ Additionally, the DPEIS mistakenly assumes that the large proposed closures in Alternative F will result in the same amount of seismic survey activity being conducted elsewhere. DPEIS at 2-32. As explained in Section III.D *infra*, such closures will actually result in a reduction in the overall amount of seismic survey activity conducted in the 10-year period. Moreover, the DPEIS's assumption that closure of these areas would provide "refuge" (DPEIS at 2-32) is an anthropomorphism that is unsupported in the DPEIS by any data or science-based explanation.

performed.” DPEIS at 2-47. The Associations object to these proposed reductions because there is no legal basis for imposing them and they are arbitrary.

G&G exploration activities authorized by BOEM may be denied or conditioned if they “would probably cause serious harm or damage to life (including fish and other aquatic life).” *See* 43 U.S.C. § 1340(c)(1); *see also id.* § 1340(a)(1) (“any person authorized by the Secretary may conduct geological and geophysical explorations in the outer Continental Shelf ... which are not unduly harmful to aquatic life in such area”). BOEM may also temporarily stop off-lease exploration or scientific research activities under a permit when the Regional Director determines that the “[a]ctivities pose a threat of serious, irreparable, or immediate harm. This includes damage to life (including fish and other aquatic life) ... [and] to the marine, coastal, or human environment.” 30 C.F.R. § 551.9(a)(1); *see also* 30 C.F.R. § 551.6(a)(2) (prohibiting a permittee from causing harm to marine life). None of these requirements are satisfied based upon the information provided in the DPEIS. Even the unrealistic and overly conservative effects analysis does not conclude that there will be any “serious harm or damage” or “serious, irreparable, or immediate harm” to marine life. Moreover, such arbitrary reductions in activity levels directly contradict OCSLA’s primary mandates, particularly because no adverse effects from the original activity levels have been demonstrated. *See supra* Section III.A.

To the extent the proposed reductions are premised on the MMPA, they are also without any legal basis. Under the MMPA, NMFS has the authority to grant or deny, or to reasonably condition, marine mammal incidental take authorizations (“ITAs”). *See Ctr. for Biological Diversity v. Salazar*, 695 F.3d 893, 916 (9th Cir. 2012) (MMPA ITAs only authorize incidental take, not the underlying activity). Accordingly, any mitigation measures premised upon NMFS’s MMPA authority may only address the proposed MMPA action—*i.e.*, authorization of incidental take, not the actual exploration activities. *See id.*; *see also* 16 U.S.C. § 1371(a)(5)(A)(i) (Secretary “shall allow” incidental taking that meets applicable statutory standards).

Finally, the proposed reductions also present practical implementation problems. For example, one could perform a 3D survey with a 4,000 cubic inch array or a 2D survey with 10 km track spacing and have half or fewer the number of takes in the same number of track miles. In this example, would 50,000 track miles at half the exposure levels be translated into 25,000 track miles for purposes of calculating the remaining allocations available? How will the reductions be fairly apportioned among the various applicants over the course of a year? Such questions are not addressed at all in the DPEIS, further highlighting the impracticability of the proposed measure.

3. Buffer zones between concurrent surveys

In Alternative B, BOEM recommends an expanded 40 km buffer zone between concurrent seismic surveys within the area of concern (“AOC”) and a 30 km buffer zone between concurrent seismic surveys outside of the AOC. No scientific evidence, published studies, or other rationales are provided for this proposed measure. Indeed, to our knowledge, no

buffer zones even approaching this size have ever been required as a condition of offshore seismic authorizations.²⁵

Moreover, buffer zones have little or no value in the GOM where directional migrations have not been documented and animals are likely to be moving in a variety of directions as they track dynamic features. Additionally, unless the vessels are moving parallel to each other at the same speed and direction, the static concept of a corridor is not applicable, with the space between vessels opening and closing depending on the relative speed of the vessels and their direction. Marine mammals are unlikely to perceive anything like a corridor when the two sound sources are moving dynamically. All that vessel separations achieve are to expose the animals to a more prolonged period of sound exposure than would otherwise be the case and expand the zone that animals might avoid.

We therefore agree with BOEM's statement that "it is doubtful that separation distances would provide the necessary benefits to offset potential impacts from sound exposure." DPEIS at 2-39. Because there is no support for this proposed measure, it should be eliminated entirely from the DPEIS.

4. Exclusion zones greater than 500 meters

All of the alternatives "use a standard exclusion zone radius of 500 m (1,640 ft) around a sound source." DPEIS at 2-40. The DPEIS explains that exclusion zones "will be dependent upon the source levels, array configuration, operational parameters, and environmental and oceanographic conditions" and that the "actual extent of the acoustic isopleths around the sound source will depend on the source level, source configuration, water depth, bottom properties, and sound propagation through the immediate environment." *Id.* BOEM's suggested approach for exclusion zones will require a substantial modeling effort and will result in exclusion zones that are many times greater than those that have typically been implemented (with success) in the GOM. The expanded exclusion zones are especially concerning because they will ultimately be dictated by the marine mammal hearing group with the largest modeled radii once new group-specific acoustic criteria are implemented.²⁶

²⁵ See, e.g., 78 Fed. Reg. 35,364, 35,423 (June 12, 2014) (vessel spacing of 24 km required to avoid any effects of multiple surveys on migrating or foraging walrus). Moreover, current technology has enabled many operators to decrease typical exposure radii to less than 10 km. See BOEM, *Atlantic OCS Proposed G&G Activities Final Programmatic EIS* (2014-001), page 2-37 and Appendix D, <https://www.boem.gov/atlantic-g-g-peis/>.

²⁶ The DPEIS does not make clear which exclusion zone size is being used. For example, on page B-72, it is stated that the radius of the exclusion zone would be the predicted range at which animals are exposed to 180 dB SPL rms, and in the very next sentence it is stated that the exclusion zone is within a radius of 500 m surrounding the center of the airgun array.

In addition, exclusion zones should be based on the best available information, and if that information demonstrates that exclusion zones of less than 500 meters are warranted, then there is no basis for arbitrarily requiring a minimum exclusion zone of 500 m (if the DPEIS intends for 500 m to be a minimum). If a minimum 500 m exclusion zone requirement is not applied, the Associations would support the incorporation of power-down procedures to mitigate any potential effects. Power-down procedures acceptable to the Associations are a modified version of the procedures described at 79 Fed. Reg. 14,780, 14,797 (Mar. 17, 2014) (“Langseth IHA”).²⁷

5. Dolphin shutdowns

The DPEIS does not clearly explain whether shutdowns for dolphins are required and, if so, under what scenarios. In Chapter 2, the DPEIS appears to state that the “Expanded PSO Program” applicable to Alternatives B-F includes shutdown requirements for whales and manatees and that these requirements are further expanded in Alternative D to apply to all “marine mammals” except for bow-riding dolphins. However, Appendix B suggests that the Expanded PSO Program requires shutdowns for all “marine mammals” except that bow-riding dolphins are excluded from this requirement only for Alternative D. DPEIS Appx. B at B-23, B-24. We assume that Chapter 2 correctly describes BOEM’s intent and that none of the alternatives require shutdowns for dolphins.²⁸ However, to the extent BOEM does contemplate the application of shutdown requirements to dolphins, or to the extent commenters advocate for dolphin shutdown requirements, such measures have no support for the following reasons.

First, dolphins are mid- to high-frequency specialists and, therefore, insensitive to the low-frequency impulse sounds emitted by seismic operations. A recently published study investigated whether bottlenose dolphin exposure to airgun impulses results in TTS. The paper states that even the highest exposures, cumulative sound exposure levels of 185-195 dB re 1 μ Pa²-s did not result in TTS in any of the subjects.²⁹ Even at ranges as close as 3.9 m and with

²⁷ Specifically, the Associations would support power-down procedures similar to those in the Langseth IHA provided that: (1) power-down would be implemented only if a marine mammal is observed in or entering (not “likely” to enter) the exclusion zone; (2) power-down procedures may involve a reduction in the volume and/or pressure of the array; and (3) if a marine mammal is observed within the 500 m exclusion zone, then the reduced array would be shut down and shutdown procedures would apply.

²⁸ We agree with, and support, the analysis and conclusion reached by BOEM in Section 2.11.1 of the DPEIS. These conclusions further support our understanding that BOEM does not intend for any of the alternatives to include a dolphin shutdown requirement.

²⁹ Finneran J.J., Schlundt C.E., Branstetter, B.K., Trickey, J.S., Bowman, V., and Jenkins, K. *Effects of multiple impulses from a seismic air gun on bottlenose dolphin hearing and behavior*. 137 J. Acoust. Soc. Am. 1634-46 (Apr. 2015). The results of this study also support inclusion of frequency weighting in updated acoustic criteria.

the airgun operating at 150 in³ and 2000 psi, resulting in cumulative SEL of 189-195 dB re 1 μ Pa²s, the impulses did not result in detectable TTS in any dolphin tested. The relatively low-frequency content in airgun impulses may also have lessened the auditory effects on dolphins, which have best hearing sensitivity at much higher frequencies.³⁰ Industry observations corroborate this scientific evidence. For example, dolphins are frequently observed by personnel on seismic vessels to approach the vessels during operations to bow-ride and chase towed equipment—a direct indication of insensitivity to seismic sound. PSO observation reports indicate that there is no statistically significant difference between the frequency of dolphin sightings and acoustic detections during seismic operations when the source is active or silent. See Attachment B.³¹

Second, in areas of high-density dolphin populations, such as the GOM, shutdown requirements for a species that frequently exhibits bow-riding behavior could effectively bring all seismic activity to a halt. Implementation of the proposed measure for dolphin shutdowns will substantially increase the number of shutdowns and delays in ramp-ups, which will result in much longer surveys and significantly increased costs with no environmental benefit. See Barkaszi, *supra*, at 1 (75% of delays in ramp-ups due to presence of protected species in exclusion zone during 30 minutes prior to ramp-up were due to dolphins).

Third, any proposed measure to require shutdowns for dolphins would be without precedent. Under Joint NTL No. 2016-G02 (and previously Joint NTL Nos. 2012-G02 and 2007-G02), BOEM required seismic operators in the GOM to shut down for any whale observed in the exclusion zone. BOEM defined “whales” as all marine mammals except dolphins and manatees. The Settlement Agreement extended the shutdown requirements to manatees.³² In short, no dolphin shutdown provision has ever been required by any United States agency, and there is no information to support a changed approach.

³⁰ In a 2011 Programmatic EIS, the National Science Foundation recognized that “[t]here has been no specific documentation that TTS occurs for marine mammals exposed to sequences of air-gun pulses during operational seismic surveys.” *Programmatic EIS/OEIS for NSF-Funded & USGS Marine Seismic Research*, at 3-133 (June 2011), http://www.nsf.gov/geo/oce/envcomp/usgs-nsf-marine-seismic-research/nsf-usgs-final-eis-oeis_3june2011.pdf (recognizing 180 dB re 1 uPa (rms) criterion for cetaceans “is actually probably quite precautionary, i.e., lower than necessary to avoid TTS at least for delphinids, belugas and similar species”).

³¹ See also A. MacGillivray et al., *Marine Mammal Audibility of Selected Shallow-Water Survey Sources*, J. Acoustical Soc. Am. 135(1) (Jan. 2014).

³² Because the Settlement Agreement clearly does not apply shutdown requirements to dolphins, we assume that Appendix B is incorrect in suggesting that Alternatives B-F include shutdown requirements for all “marine mammals.”

Fourth, to the extent the DPEIS contemplates shutdowns for all marine mammals except dolphins approaching the vessel to bow-ride, implementation of such a measure is impractical. We are aware of no mitigation measures applicable to offshore exploration activities in which an observer is required to subjectively determine the intent of a marine mammal (*i.e.*, the intent to bow-ride or to approach a vessel). Determining marine mammal intent from great distances is very difficult for experienced marine mammal biologists in controlled scientific experiments, let alone for observers who will be attempting to determine dolphin intent over vast distances in the ocean environment. Based on observation reports, PSOs will be unable to confidently assess animal behavior or “intentions” because they cannot accurately determine species within the expanded exclusion zone.³³ The result is that observers will likely, out of caution, call for shutdowns in almost all instances where dolphins are observed within the exclusion zone.

In sum, any shutdown requirement applicable to dolphins in the GOM would broadly and substantially impact seismic operations without any corresponding environmental benefit and without any scientific support. The Associations respectfully request that BOEM clarify in its final PEIS that no such requirement is included in any of the alternatives.

6. Passive acoustic monitoring

Under Alternatives B-F, BOEM would require the use of Passive Acoustic Monitoring (“PAM”) as part of the Seismic Airgun Survey Protocol in certain circumstances. *See* DPEIS at 2-43. PAM is one of several monitoring techniques that offers a monitoring capability during periods of poor visibility or night conditions. PAM complements (rather than replaces) traditional visual monitoring. However, towed commercially available PAM systems can be highly variable and less robust than other in-sea integrated PAM capabilities/equipment. In addition, overall performance and capabilities of PAM are dependent on factors such as technical specification of equipment, operational setting, availability of experienced and trained personnel, and the species of marine mammals present in a given area. Mandatory use of PAM may substantially increase survey cost, require the placement of more personnel on vessels (*i.e.*, four dedicated PAM observers onboard), and potentially increase entanglement risk due to more gear being towed in the water. The Associations therefore urge BOEM to make the use of PAM optional in all alternatives, as recommended in Alternative A. *See Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1088 (9th Cir. 2013) (an agency need not consider a mitigation measure with a “prohibitively high cost” that “makes it infeasible”); *see also* 46 Fed. Reg. at 18,031 (“mitigation measures must be developed where it is feasible to do so”).

³³ *See Attachment B*. It is well known that different species will exhibit different behaviors. For example, Risso’s dolphins generally avoid vessels and rarely bow-ride, rough-toothed dolphins generally avoid vessels but do bow-ride, and common dolphins are frequent bow-riders. *See* K. Wynn & M. Schwartz, *Guide to Marine Mammals and Turtles of the U.S. Atlantic and Gulf of Mexico* (2009).

7. National standards for PSOs

The DPEIS states that observer qualifications addressed in NOAA Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys* (Nov. 2013) (“Observer Standards”) “may be required for future activities.” DPEIS, Appx. B at B-16. Although we appreciate the agencies’ attempt to clarify and standardize observer guidelines and requirements, the Observer Standards are flawed in a number of respects. It is imperative that the agencies consider public input on the Observer Standards and make the revisions necessary to ensure that the standards are workable, accurate, and appropriate before they are required. The standards should encourage adaptive technology, remote monitoring, reduction of health, safety, and environmental risks, and use of an updated reporting form that provides substantive data from observations to inform the need (if any) for additional or revised mitigation measures. The letter by IAGC, API, and NOIA, dated May 2, 2014, addressing the Observer Standards more specifically states our concerns with the Observer Standards and offers constructive solutions. *See Attachment D*. We appreciate BOEM’s consideration of our concerns.

8. Non-duplicative surveys and lowest practicable source

With respect to potential measures regarding non-duplicative surveys and use of the lowest practicable source, the DPEIS states:

The goal of these measures is to reduce the overall sound source levels in the AOI, which could be effective in achieving this goal. Overall reduction in sound input may have wide-scale benefits. As noted in Chapter 1, under the terms of the Settlement Agreement, BOEM convened two panels to determine the feasibility of including refined standards for these two requirements; however, the panels’ work on these matters is still in process and was not available at the time the analysis for this Programmatic EIS was completed.

DPEIS at 2-39. However, this characterization is incorrect because the panels’ work on these two issues has concluded and this description is not consistent with the panels’ findings. The DPEIS should be updated to reflect the panels’ findings. Consistent with those findings, the Associations’ position is that these measures would have no meaningful beneficial impact.

In addition, Appendix L incorrectly states that “[a] duplicative seismic survey is a deep-penetration geophysical survey, as defined in [the Settlement Agreement], whose acquisition parameters, design, technology, and geospatial surface location metrics make it essentially the same as an existing seismic survey.” DPEIS, Appx. L at L-14 (emphasis added). The Settlement Agreement does not define a duplicate seismic survey as being “essentially” the same as an

existing seismic survey. Accordingly, Appendix L should be revised to be consistent with the Settlement Agreement. *See NRDC v. Jewell*, Dkt. 118-2, Section VIII.A.

D. The Economic Impacts of Alternatives B-G Threaten the Viability of G&G Activities in the GOM

“Where the action subject to NEPA review is triggered by a proposal or application from a private party, it is appropriate to give substantial weight to the goals and objectives of that private actor.” *Citizens’ Committee to Save Our Canyons*, 297 F.3d 1012, 1030 (10th Cir. 2002); *see also, e.g., Sylvester v. U.S. Army Corps of Eng’rs*, 882 F.2d 407, 409 (9th Cir. 1989) (explaining that agency has a duty to take into account objectives of applicant’s project). An alternative considered in an EIS is not reasonable when it renders the applicant’s proposed project “impractical,” or not “technologically or economically feasible.” *Citizens’ Committee to Save Our Canyons*, 297 F.3d at 1031-32; *see also Sylvester*, 882 F.2d at 409 (explaining that the agency must consider whether alternative is “economically advantageous” to applicant’s objective); *Cape May Greene, Inc. v. Warren*, 698 F.2d 179, 187 (3d Cir. 1993) (noting NEPA “requires a balancing between environmental costs and economic and technical benefits”). As demonstrated below, the various measures included in Alternatives B-G threaten the operational and economic viability of G&G activities in the GOM, which will lead to fewer wells being drilled and diminish future production.

In general, BOEM’s economic analysis found in Section 4.13 of the DPEIS is inadequate, especially in the assumptions made about activity levels in the face of overly restrictive mitigation measures and the fact that the analysis appears to completely ignore the potential of reduced future drilling and production because there would not be adequate G&G data, especially seismic, available. In addition, while the DPEIS describes the potential economic impacts of the various alternatives (*e.g.*, increased cost leading to decreased profits; supply chain impacts; lost production), it does not provide cost estimates for direct, indirect and induced economic impacts over the 10-year time period, nor does it adequately account for the variability inherent in offshore oil and natural gas exploration and development. As such, stakeholders cannot evaluate the full economic impacts of the alternatives.³⁴

³⁴ BOEM notes that qualitative economic impact analyses were performed for Alternatives E and F (DPEIS at 4-395) and additional economic analyses will be conducted as part of the Regulatory Impact Analysis (DPEIS at 4-396). The impacts that were evaluated qualitatively have the potential to run into the billions of dollars and the Associations believe that full quantitative economic analysis should have been included in the DPEIS. Regardless of the source of the missing analysis, a full quantitative economic analysis should be included in the final PEIS.

In Alternatives B-F, BOEM notes in multiple places³⁵ that any seismic survey not conducted because of operational inefficiencies, seasonal shutdown, survey restrictions, or area closures could be conducted at a later time or else the vessels would move to another area of the GOM. BOEM uses these assumptions as partial justification that economic impacts of the alternatives will be either minor (Alternative C) or minor to moderate (Alternatives B, D, E, F), yet these assumptions are flawed. The potential to have surveys done in future time periods, as stated in the analysis, does not reduce the negative socioeconomic impact of an alternative. With restrictions continually in place, surveys originally planned for Year 1 would just replace surveys that would have occurred in Year 2, while even more Year 2 planned surveys would be pushed to Year 3, and so on. Over time, the ripple effect of delayed or forgone surveys will reduce overall seismic data collection, adversely impacting the industry's ability to drill new wells and curtailing future production. Timing delays large enough to affect drilling schedules are more important to potential economic impacts than seismic cost increases. BOEM does not provide estimates for the number of wells that will not be drilled and how reduced drilling will have significant negative impacts on production, government revenue, gross domestic product ("GDP"), and employment.

BOEM's analyses of the economic impacts associated with the proposed reductions in seismic surveys found in Alternatives E1 and E2 are particularly concerning:

1. BOEM assumes that reducing seismic survey activity by 10% and 25% reduces direct employment by a proportional amount, resulting in 600 to 1,500 fewer jobs and economic/GDP impacts of \$294 million to \$735 million per year. This assumption is a good approximation of a portion of the direct impacts associated with reduced seismic survey activity. BOEM also mentions indirect and induced impacts but provides no calculations or estimates. DPEIS at 4-400, 401. There is no reason not to provide these estimates. According to estimates made using the IMPLAN model, adding in the indirect and induced impacts of reduced seismic survey spending more than doubles the employment impacts and increases GDP impacts by 70%.
2. BOEM describes the real possibility that investments in new wells and platforms could be delayed and some prospective areas will not be developed at all. However, BOEM does not provide an estimate of how much activity will be forgone and thus no estimate of potential economic impacts is given. This is a significant flaw in the economic analysis of Alternatives E1 and E2 and should be rectified prior to publication of the final PEIS.

³⁵ BOEM could improve the DPEIS by eliminating or reducing the repetition in the impact analysis associated with each alternative and instead focusing on the differences for each alternative.

3. BOEM attempts to rationalize and minimize the potential impacts of Alternatives E1 and E2 by highlighting “the substantial declines in oil and gas prices since mid-2014 will likely curtail oil and gas exploration activities, implying that G&G activities may decline in absence of Alternative E.” DPEIS at 4-391, 392. However, the economic impacts are an estimate of future activity comparing the potential impacts with and without the proposed policy, not a comparison to an activity level in the past or a speculation about future oil prices as drivers of exploration. This comparison does not justify not including potentially large impacts of lost drilling activity.
4. On pages 4-391 and 392, BOEM makes several statements regarding potential impacts of Alternative E that are not relevant to the economic analysis or are not justifiable. In particular, whether the impacts are “nominal or minor” relative to the overall economy of all the coastal states is irrelevant. The full economic impacts of the action, in and of itself, should be estimated. The statement that “the majority of workers that are displaced from the G&G industry would likely be able to find employment in the region” is neither justified nor plausible, especially in the case of non-maritime workers on seismic survey vessels.
5. The statement that United States production will depend “on the extent to which oil and gas companies divert capital from offshore oil and gas development to onshore development in the US” is highly misleading. DPEIS at 4-401 and 4-403. Capital will move globally, not just within the United States. Restricted offshore GOM capital expenditures will likely go to the best second alternative, which will not necessarily be in the United States. Certain offshore specific assets, such as drilling rigs, will definitely be deployed in foreign offshore markets, not U.S. onshore.

The analysis BOEM has provided for Alternative F is no better. The potential economic impact would be dependent on the number of quality oil and gas targets in the four areas. In addition, there are at least 5,350 active leases in these areas whose potential value would be greatly compromised. Any current investment in these areas would be essentially stranded and the value of lost revenue could be in the billions of dollars, yet BOEM has not provided estimates for these lost opportunities.

Finally, BOEM has determined that Alternative G—a complete halt to seismic surveys—would only have a “moderate” socioeconomic impact. This is a stunning remark coming from BOEM, suggesting it does not grasp that offshore oil and gas exploration and development fundamentally require seismic data acquisition in order to pursue and support ancillary activities. Without seismic data, offshore oil and gas exploration and development would simply not be economically viable. The complete collapse of the offshore oil and natural gas industry in the GOM, including the loss of all direct, indirect and induced jobs and GDP contributions for operations in federal waters, would hardly be a “moderate” impact. The impacts of shutting down seismic surveys in the GOM are clearly “major” and Alternative G should be dropped from further consideration.

In sum, BOEM has failed to provide an adequate accounting of potential economic impacts for stakeholders to make an adequate assessment of the practicability or feasibility of the proposed alternatives. The Associations respectfully urge BOEM to conduct the required quantitative analyses and provide the findings for appropriate consideration going forward.

E. The DPEIS Fails to Use Recently Issued Acoustic Criteria and Presents an Unnecessarily Confusing Acoustic Analysis

In August 2016, NOAA issued its *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing* (the “Guidance”). The Guidance establishes acoustic criteria for evaluating Level A harassment and TTS. Despite the availability of drafts of the Guidance and the scientific bases for the Guidance for many months prior to August 2016, the DPEIS’s exposure modeling analysis does not use the Guidance. See DPEIS at 1-17 and 1-20. The Associations assume that BOEM will use the Guidance in subsequent action-specific NEPA analyses.³⁶ However, even if this assumption is correct, BOEM must clarify and better explain the relevance of the Guidance in the DPEIS.

For example, the DPEIS states that “at a first glance, there are differences between the values [generated by the Guidance and by the DPEIS exposure modeling], but they do appear significant at a programmatic level.” DPEIS at 1-18. It is not clear from this statement whether BOEM intends to say that the differences are or are not likely to be significant at the programmatic level considered in the DPEIS. Additionally, the DPEIS states that “there is the potential for some fairly large differences in results from the modeling done by BOEM and the 2016 NMFS acoustic guidance” and cites an example for low-frequency (“LF”) cetaceans. However, this example makes a number of simplifying assumptions, such as “most of an airgun’s energy is produced in the 100- to 300-Hz frequency band.” *Id.* This assumption is not entirely correct because sounds produced by airguns contain substantial energy from 10 to 60 Hz. Additionally, the -13 dB difference between the two frequency weighting functions noted in the DPEIS are calculated by considering only the 200 Hz frequency band, while substantial differences between the frequency weighting functions are present from 30 to 1,000 Hz.

As another example, for mid-frequency (“MF”) and high-frequency (“HF”) cetaceans, the frequency weighting curves shown in the DPEIS are even more dramatically different across the 100 to 300 Hz band selected to represent airgun sounds. *Id.* However, the preliminary analysis in the DPEIS does not address how this may dramatically reduce the area or volume within which MF and HF cetaceans may be considered exposed above the criteria. Instead, the DPEIS goes on to address high resolution geophysical (“HRG”) sources and indicates they would be evaluated as non-impulsive sources. Treating HRG sources as non-impulsive would be a break from traditional assessments, yet this is not explained or justified in the DPEIS or its appendices.

³⁶ We also assume that NMFS will apply the Guidance in its evaluations of MMPA ITAs associated with GOM activities.

Moreover, the summary paragraph on page 1-19 does not provide an example similar to that for LF cetaceans to support why BOEM believes the number of exposures of MF and HF cetaceans would “remain the same or slightly reduced overall” if the Guidance were used.

Additionally, the analytical methods and criteria that are used in the acoustic analyses supporting the Appendix D modeling are less than straightforward. For example, starting on page 4-12 of the DPEIS, BOEM refers to the NMFS 1995 criteria (180/160 dB re 1 μ PaSPL rms), a set of 2012 weighting functions (*e.g.*, those used in the modeling for the DPEIS) for which a reference is not provided, and to the NMFS July 2016 criteria. Appendix D uses the NMFS 1995 criteria, but applies Southall et al. (2007) M-1 weighting to those values, which were originally unweighted values. DPEIS, Appx. D at D-174. The Appendix D modeling also uses Southall et al. (2007) SPL peak Permanent Threshold Shift (“PTS”) onset values, but for LF cetaceans creates its own PTS onset threshold of 192 dB re 1 μ Pa² s SEL by subtracting 6 dB from the MF cetacean onset value of 198 dB re 1 μ Pa² s (another precaution layered on top of already precautionary numbers). *Id.* at D-55. Another example of unclear development of a threshold value appears in the very next paragraph where the analysis cites a value of 187 dB SEL as the MF cetacean threshold, derived by using a beluga TTS onset of 186 dB, applying Finneran and Jenkins (2012) Type II M-weighting to derive a weighted value of 172 dB and then adding 15 dB to produce a PTS threshold for MF cetaceans of 187 dB. Obviously, the methods for deriving the criteria used in the analysis are hardly clear. Nowhere in Appendix D or the body of the DPEIS is there a simple table listing the threshold values that were applied in the exposure analysis.

In sum, the failure of the DPEIS to use the Guidance in its effects analysis is legally and scientifically tenuous. *See N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1086-87 (9th Cir. 2011) (“Reliance on data that is too stale to carry the weight assigned to it may be arbitrary and capricious.”). Proper application of the Guidance in action-specific NEPA evaluations may remedy this shortcoming; however, to the extent the final PEIS does not address this issue in a more robust manner, NMFS’s future reliance on the final PEIS for the MMPA incidental take rulemaking process could be jeopardized. It is imperative that the public be provided a reasonable opportunity to carefully review and comment on the application of the Guidance as it directly pertains to the current action. Regardless of its future application, if BOEM does not intend to use the Guidance in the modeling that will support the final PEIS, then it must provide a more developed and accurate assessment of the differences that result from application of the Guidance compared to the criteria and methods actually used. BOEM must also more clearly explain those criteria and methods in the final PEIS.³⁷

³⁷ As the Associations addressed in three comment letters submitted during the process for developing the Guidance, there are technical flaws in the Guidance. We have attached those three comment letters to this letter, and request that they be included in the administrative record for this NEPA review process. *See Attachment E.*

F. The Appendix D Modeling Inconsistently and Unreliably Uses Marine Mammal Population and Density Data

The Phase I modeling in Appendix D uses Navy Operating Area Density Estimates (“NODES”) and NMFS Stock Assessment Reports (“SARs”) marine mammal population data. However, the Phase II modeling inconsistently uses the 2016 Duke model of animal distribution and abundance. The following summarizes some of the problems associated with Appendix D’s use of varying datasets and models related to marine mammal abundance and density.

First, a problem with habitat-correlated density modeling is that the model may not capture all the habitat variables that are important to the animals, and consequently places modeled animals in areas where they never or rarely go. For example, Bryde’s whales are rarely if ever seen outside De Soto Canyon, yet the Duke model places modeled Bryde’s whales in relatively high density at the continental shelf edge from Texas to the Florida Straits because the habitat suitability model indicates that they “could” use those places. The Duke model thus results in the calculation of densities of Bryde’s whales in Zone 4 of the Appendix D’s seven zone system when that clearly is not supported by the available sighting data.

Second, the Appendix D makes unsupported revisions to some results from the Duke model, which were themselves arbitrary or poorly supported. For example, the Duke model places sperm whales and Kogia whales in 500 m of water even though the available sighting data shows that they occur in shallower water. The Appendix D modeling, however, goes one step further and pushes all sperm whales into 1,000 m water depth or deeper, further exaggerating the disparity between actual observations (which tend to be biased toward shallower water) and the model (which uses “expert knowledge” to put the animals where the modeler thinks they ought to be).

Third, the Appendix D modeling evenly spreads species for which little data are available (*e.g.*, killer whales, false killer whales, Fraser’s dolphins) across all habitats the modelers deem appropriate (generally deeper water, Zones 4-7). Some species, such as Fraser’s dolphins and false killer whales, are therefore assumed to be abundant and widespread in areas where they are historically seldom seen.

Fourth, rather than use a specific value for each 100 km square, the Appendix D modeling averages the values from each 100 km² box across an entire zone containing hundreds or thousands of 100 km² boxes. This enables the placement of animals into the outermost Zone 7 where there is little or no data and therefore no modeling by Duke. By expanding the Duke averages into areas outside the scope of the model, Appendix D increases the total number of animals present beyond the predictions of the SARs, NODES, or the Duke model. Appendix D presents the averaged values as a minimum, maximum, and mean, which is an appropriate way to convey some of the statistical uncertainty about the model numbers (*see* DPEIS, Appx. D at D-201), but there is insufficient information to determine how these values were obtained from the source information.

G. The Cumulative Effects Analysis in Appendix K Should Be Eliminated

Appendix K contains novel concepts that are inconsistent with a substantial amount of scientific literature addressing the topics of hearing masking and chronic effects of sound. For example, Appendix K presents new concepts, such as “lost listening area,” which have no scientific precedent. Additionally, Appendix K introduces novel risk metrics like annual cumulative SEL and equivalent continuous sound level (“ L_{eq} ”) that are not biologically realistic concepts (pages K-22 and K-24), and other ideas that have no apparent basis, such as the Cumulative and Chronic Exposure metric (page K-10). Equally concerning, the novel analysis in Appendix K is introduced, for this first time, without any serious peer-review or expert evaluation.

Appendix K presents a hypothetical analysis of “lost communication space” for Bryde’s whales (pages K-32 to K-41) without any evidence to support an actual (not hypothetical) baseline for this or any related species. Communication space is considered to be the maximum detectable range of a sound, which far exceeds the actual communication space for any species, terrestrial or marine. Another omission in Appendix K is the lack of reference to a recent and very thorough review of the subject of hearing masking (Erbe et al. 2015). Instead, Appendix K primarily references Clark et al. (2009) for masking, even though it has been demonstrated to be an incomplete model that overestimates the risk of masking.

In addition, the Appendix K analysis is based on assumptions about hearing and hearing masking that are clearly incomplete and overly conservative, such as assuming that the animal requires signal excess of 10 dB to detect a conspecific call (page K-17), when the standard in the literature is detection at -3 to -6 dB below ambient. Appendix K treats received sound as being the same at all depths (2D “disk” model of masking, page K-17), and no directional release from masking is provided—not because the animals cannot use the 3 to 12 dB of gain they get from directionality, but because the analysis suggests that the survey tracks are “randomly oriented” (page K-19). This inability to determine the angular resolution between receiver, conspecific caller, and the seismic source is puzzling because the Phase I and Phase II exposure models provide very specific direction-dependent transmission loss model data and are dynamic 4D models that should easily yield the necessary information to insert spatial release from masking in the communication space equation. Instead, a generic “signal processing gain” term is used to account for the various features of a signal that enable the receiver to pick it out of sound. Finally, Appendix K uses an unrealistic and simplistic formula (Sirovic et al. 2014) for determining the bandwidth of the signal (to the human, not the whale listener) and call length (without redundancy or signal variance and periodicity), ignoring substantial literature on this topic for humans and other species (page K-20).

In sum, Appendix K is premature, inappropriate, and not consistent with the best available science. Moreover, its relevance to the DPEIS is not explained by BOEM. Because of its many defects, Appendix K should be removed from the DPEIS.

H. The Analysis of Potential Effects of Seismic Activities on Sea Turtles Can Be Improved

The DPEIS adequately reviews the literature regarding sea turtle hearing and accurately assesses what is known about the frequency range of turtle hearing based on the best available science. However, the DPEIS's sea turtle effects analysis (Section 4.3) fails to sufficiently address sea turtle hearing thresholds at best sensitivity as reported in the scientific literature. These values, which range from 93 to 117 dB at the most sensitive frequencies, are reported in Appendix E but there is no discussion of the meaning of those values. Although the data on sea turtle hearing "are too limited to be definitive because of the low numbers of individuals tested," the best available science demonstrates that sea turtle hearing is substantially less sensitive than marine mammal and fish hearing. By comparison, peak sensitivity thresholds of approximately 30 or 40 dB are the most sensitive frequencies in some odontocetes, and peak sensitivity thresholds of approximately 50 dB are most sensitive frequencies observed in some fish species. See Popper et al. (2014) at 9 (*see* audiograms). The DPEIS should include a more detailed assessment of sea turtle hearing thresholds at best sensitivity as part of the effects analysis.

I. The Potential Effects of Seismic Activities on Fish and Fish Resources Are Insignificant

Seismic survey activities do not result in any significant adverse effects to fish populations or to fisheries. Marine seismic surveys have been conducted since the 1950s and experience demonstrates that fisheries and seismic activities can and do coexist. There has been no observation of direct physical injury or death to free-ranging fish caused by seismic survey activity, and there is no conclusive evidence showing long-term or permanent displacement of fish. Any impacts to fish from seismic surveys are short term, localized, and not expected to lead to significant impacts on a population scale.³⁸

³⁸ See *Science for Environment Policy, Future Brief: Underwater Noise, European Commission*, June 2013: http://ec.europa.eu/environment/integration/research/newsalert/pdf/FB7_en.pdf; *Stocks at a Glance – Status of Stocks*, 2011, U.S. Department of Commerce, NOAA: http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/archive/2011/2011_status_of_stocks_fact_sheet.pdf; Boeger, W.A., Pie, M.R., Ostrensky, A., Cardoso, M.F., 2006. *The Effect of Exposure to Seismic Prospecting on Coral Reef Fishes; Brazil. J. Oceanogr.* 54, 235-239; 3D marine seismic survey, no measurable effects on species richness or abundance of a coral reef associated fish community. *Mar. Pollut. Bull.* (2013), <http://dx.doi.org/10.1016/j.marpollbul.2013.10.031>; Hassel, A., Knutsen, T., Dalen, J., Skaar, K., Lokkeborg, S., Misund, O.A., Osten, O., Fonn, M., Haugland, E.K., 2004. *Influence of seismic shooting on the lesser sand eel.* *ICES J. Mar. Sci.* 61, 1165-1173; Pena, H., Handegard, N.O. and Ona, E. 2013. *Feeding herring schools do not react to seismic air gun surveys.* *ICES J. Mar. Sci.*, <http://icesjms.oxfordjournals.org/content/70/6/1174.short?rss=1>; Saetre, R. and E.

(continued . . .)

Seismic source vessels move along a survey tract in the water creating a line of seismic impulses. As the seismic source vessel is in motion, each signal is short in duration, local, and transient. There is no conclusive evidence showing long-term or permanent displacement of fish.³⁹ Similar seismic surveys conducted for research in the Atlantic OCS did not result in any detectable effects on commercial or recreational fish catch, based on a review of NMFS's data from months surveys were conducted, which noted that "there was absolutely no evidence of harm to marine species" (including fish).⁴⁰ Additionally, in the GOM, where G&G activities have routinely occurred for over 40 years, seafood harvested from the OCS is worth approximately \$980 million annually and the fishing industry directly supports in excess of 120,000 jobs, suggesting that G&G activities can occur without negatively impacting commercial fisheries.

Finally, seismic and other geophysical surveys also do not result in closing areas to commercial or recreational fishing. During surveys, the survey crews work diligently to maintain a vessel exclusion zone around the survey vessel and its towed streamer arrays to avoid any interruption of fishing operations, including the setting of fishing gear. As with all multiple uses of offshore waters, there must be a certain level of coordination by all parties. At sea, coordination is regulated by the U.S. Coast Guard under the International Regulations for Preventing Collisions at Sea, requiring a Local Notice to Mariners specifying survey dates and locations.

(. . . continued)

Ona, 1996. *Seismic investigations and damages on fish eggs and larvae; an evaluation of possible effects on stock level*. *Fisken og Havet* 1996:1-17, 1-8.

³⁹ Although some studies have shown that various life stages of fish and invertebrate species can be physically affected by exposure to sound, in all of these cases the subjects were very close to the seismic source or subjected to exposures that are virtually impossible to occur under natural conditions. For example, frequently cited experimental studies such as Skalski et al. (1992), Lokkeborg et al. (2010), Engas (1996), and Wardle (2001) employed artificially concentrated sound within hundreds of meters of the fish under observation and the fishing vessels. As Lokkeborg et al. (2012) noted in a recent review of the literature, "Seismic air gun emissions distributed over a large area may thus produce lower sound exposure levels and thus have less impact on commercial fisheries." As another example, Aguilar de Soto (2013) exposed scallop larvae to noise at loud volume for up to 90 hours at a distance of 9 centimeters, which is virtually impossible to occur outside of experimental settings.

⁴⁰ See *New Jersey v. Nat'l Sci. Found.*, No. 3:14-cv-0429 (D. N.J.), Federal Defendants' Brief in Opposition to Plaintiffs' Motion for Declaratory and Injunctive Relief at 25-26 (citing Exhibit D, Higgins Decl. ¶ 21, Exhibit D, Mountain Decl. ¶ 8 (July 7, 2014)).

For these reasons, the effects of seismic activities on fish and fish resources are most accurately described as “nominal” (to use the DPEIS’s impact categorization values). We therefore object to the mischaracterization of impacts to commercial fisheries as “minor.” *See* DPEIS at 2-35.

J. The Adaptive Monitoring Program Must Be Consistent with Applicable Law

The DPEIS states that BOEM and NMFS are presently developing an “adaptive monitoring program” that will be implemented for the life of the anticipated MMPA incidental take regulations and “will outline high-level monitoring objectives focused on understanding how and to what extent G&G activities may affect marine mammals in the Gulf of Mexico.” DPEIS at 1-13. However, the DPEIS includes very little information about the adaptive monitoring plan because, according to the DPEIS, “an opportunity for public input on the monitoring plan would occur through the process that NMFS undertakes in response to BOEM’s petition for rulemaking under the MMPA.” DPEIS at 1-14.

The Associations have a strong interest in environmental monitoring—both to better understand the environment in which our members work, but also to mitigate potential risks of activities to living marine resources. The Associations support efforts that improve the quantity and quality of information related to determining the nature and magnitude of the potential effects of offshore G&G activities on marine mammals. Such information assists with developing reasonable and workable incidental take MMPA authorizations, including appropriate mitigation measures to minimize incidental take, and correctly assessing the type and amount of incidental take that occurs in the course of G&G operations. In this light, the Associations support both ongoing and future research endeavors by industry and its partners that help to inform the understanding and mitigation of potential effects of G&G activities on marine life in the GOM. We also support agency efforts to improve the collection and use of the best available science consistent with the requirements and limits of the MMPA.

Nonetheless, the Associations have expressed concern on multiple occasions that the agencies’ envisioned monitoring requirements for the forthcoming MMPA regulations for geophysical surveys in the GOM will exceed the authority granted to NMFS. We have explained in detail that the MMPA does not authorize NMFS to require as a condition of an ITA the preparation or development of a large-scale, expansive monitoring plan that reaches beyond the time and area in which site-specific activities are undertaken or the performance of actions related to such a plan. The comments detailing these concerns are attached as Attachment F so that they may be included in the administrative record supporting the final PEIS. The Associations look forward to working collaboratively with BOEM and NMFS to complete the preparation of a legally compliant and operationally effective monitoring program.

K. The DPEIS's MPA Discussions and Findings Must Be Clarified, Improved, and Justified

The DPEIS's discussion of Marine Protected Areas ("MPAs") is unclear and confusing. We have noticed that BOEM tends to conflate various legally designated and non-legally designated terms, such as "Biologically Important Areas," Environmental Important Areas. For example, "Deepwater MPA" appears to be a new construct because Deepwater MPAs are not, to our knowledge, formally designated regions. The DPEIS describes "Coastal MPAs" as consisting of national parks, national wildlife refuges, national estuarine research reserves, and State-designated MPAs (DPEIS at xxxv), but "Offshore MPAs" (a new term) are described as consisting of national marine sanctuaries (NMSs), Deepwater MPAs, and fishery management areas, with no further explanation of what defines a Deepwater MPA. Of the Offshore MPAs listed, it appears that the brine pool and chemosynthetic MPA sites (*e.g.*, Green Canyon ["GC"] 233 Brine Pool, GC 234 Chemo Community, and Bush Hill Chemo Community) are deeper than 1,000 feet, but many of the coral and hardbottom sites listed are no deeper than 1,000 feet.⁴¹ In addition, Section 2.8-1 of the DPEIS (page 2-16) describes four "deepwater areas" for closure (the Central Planning Area ("CPA") Closure Area, the Eastern Planning Area, the Dry Tortugas Closure Area, and the Flower Gardens Closure Area).⁴² BOEM should more clearly characterize these areas and explain their significance to the DPEIS's analysis of seismic activities. In particular, closure of the CPA will lead to a significant loss of economic opportunities as many leaseholders in this area will be unable to fulfill lease commitments.

The DPEIS also suggests, without supporting explanation, that MPAs may be used to restrict activities. *See, e.g.*, DPDEIS at 4-261 ("All sites listed are afforded some degree of protection based on their associated management plans."); *id.* at 3-29 ("All authorizations for G&G surveys proposed within or near these [specific benthic locations and MPA] areas would be subject to the review noted previously to facilitate avoidance."); *id.* at 4-269 ("While seismic surveys employing airgun arrays and hydrophone streamers are not currently precluded from conducting surveys over deepwater MPAs, other G&G activities may not be allowed in designated No Activity Zones."). Although it is appropriate under NEPA to describe these areas as parts of the existing environment that have ecological significance, if BOEM and/or NMFS intends to use these areas as a basis for implementing additional restrictions on activities, then

⁴¹ We understand that the South Atlantic Fishery Management Council has designated Deepwater MPAs (ranging from about 200 to 1,000 feet deep) to protect deepwater fish species, but it does not appear that the Gulf of Mexico Fishery Management Council has made similar designations.

⁴² BOEM's definition for "deepwater" had been 300 m (~1,000 feet) per NTL 2009-G40.

that intention must be disclosed and clearly explained, and the supporting legal authority must be identified.⁴³

L. The DPEIS Is Poorly Organized and Presented

Respectfully, the DPEIS is poorly organized and presented. For some sections and appendices, it is almost impossible to clearly review and understand many of the underlying technical analyses. The body of the DPEIS contains a substantial amount of both conflicting and redundant material, which is repeated in appendices, and in appendices to appendices. For example, Appendix D itself has six appendices, many details of which conflict with portions of the body of the DPEIS or with Appendix D itself. As another example, sections addressing threshold criteria in the body of the DPEIS (pages 4-12; 4-33; 4-45) and in Appendix D (D-50; D-25; D-56; Table 6) conflict with Appendix H. Assumptions and conclusions are buried in the details of Appendix D, but the other documents (*i.e.*, the DPEIS and Appendix H) present no conclusions that clearly correspond to those presented in Appendix D's Phase II model. The three sections on threshold criteria in these three separate documents appear to have been written by three different people who did not view each other's work.⁴⁴ There appears to be hundreds of referential and typographical errors in the DPEIS and its appendices. In short, the overall quality and clarity of the analyses presented in the DPEIS and its appendices is poor and inhibits meaningful review and input, particularly in light of the relatively short period that was provided for review and comment on the DPEIS.⁴⁵

M. The DPEIS's Flaws Place Future Federal Actions at Risk

The flaws in the DPEIS (as described above), to the extent they are not cured in the final PEIS, may have unintended and undesired negative consequences for any agency that relies on the final PEIS for the authorization of future federal actions and, specifically, for the issuance of MMPA ITAs in the GOM. For example, the DPEIS makes unrealistic, incorrect effects findings that will almost certainly contradict findings made in reviews of future federal actions (assuming those reviews are performed correctly). Additionally, the DPEIS's failure to address the effects of mitigation measures will very likely contradict subsequent MMPA Section 101(a)(5)

⁴³ The "moderate" effects finding for marine mammals in MPAs lacks rational support. There is no explanation in the DPEIS why impacts reach the level of "moderate" for marine mammals inside of MPAs when MPAs represent relatively small areas inside the AOC.

⁴⁴ Appendix D also refers to a set of Excel workbooks (*see, e.g.*, D-213) that cannot be found on the BOEM website and for which a link is not otherwise provided.

⁴⁵ In addition to the substantive errors addressed in this comment letter and the associated attachments, the Associations have identified many typographical errors and minor editorial mistakes in the DPEIS. The Associations plan to provide BOEM with a table of these errors and mistakes after the close of the comment period.

evaluations, which require the permitting agency to consider the effects of mitigation measures in making a determination that the authorized take will have a “negligible impact” on marine mammal species or stocks. 16 U.S.C. § 1371(a)(5)(A), (D). By failing to evaluate the actual anticipated effects of G&G activities in the GOM, and by failing to consider the effects of mitigation measures, BOEM has created a scenario in which the final PEIS will likely (if not corrected) present significant contradictions and inconsistencies with subsequent action-specific regulatory processes. For this additional reason, the serious flaws in the DPEIS must be corrected before a final PEIS is issued.

IV. CONCLUSION

As explained above, the performance of seismic and other geophysical surveys is critical to the federally mandated “expeditious and orderly development” of GOM OCS. A wealth of data and information demonstrates that these surveys will have no more than a temporary, localized, and negligible impact on marine life. Unfortunately, the DPEIS presents analyses that are contrary to this information and otherwise flawed in many respects, including but not limited to, the (1) failure to consider the environmental benefits of the proposed action; (2) reliance on an effects analysis that is unlawfully premised on a worst case scenario and overly conservative, flawed assumptions; (3) failure to consider the effects of mitigation measures; (4) failure to use the best available scientific information; (5) unreliable and inconsistent use of marine mammal population and density data; (6) recommendation of mitigation measures that are infeasible and unsupported; (7) reliance on a woefully inadequate economic impacts analysis, and (8) use of an unsupported and novel cumulative effects assessment (Appendix K).

For the reasons stated above, Alternative A is the only alternative that may be consistent with the best available science, operational feasibility, and applicable law. The Associations strongly object to all of the other Alternatives presented in the DPEIS for all of the reasons stated above and particularly because BOEM reaches the same effects conclusions for Alternative A as it does for all of the other Alternatives (except Alternative G). Before the DPEIS is issued as a final PEIS, all of the flaws detailed in this comment letter and the associated attachments must be addressed and corrected.

[CONTINUED ON NEXT PAGE]

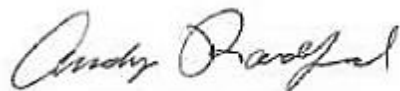
Dr. Jill Lewandowski
November 29, 2016
Page 40

We appreciate your consideration of all of the comments set forth in this letter, which are intended to be constructive and to facilitate the improvement of the scientific and legal integrity of the DPEIS. Should you have any questions, please do not hesitate to contact Nikki Martin (713.957.5068) or Andy Radford (202.682.8584).

Sincerely,



Nikki Martin
International Association of Geophysical Contractors
President



Andy Radford
American Petroleum Institute
Sr. Policy Advisor – Offshore



Jeff Vorberger
National Ocean Industries Association
Vice President Policy and Government Affairs



Greg Southworth
Offshore Operators Committee
Associate Director

ATTACHMENT A

BOEM **BOEM'S PRECAUTIONARY MODEL VS BEST AVAILABLE SCIENCE (BAS) MODEL** **BAS**

1

SOUND SOURCE



X **2** X

SOUND FIELD



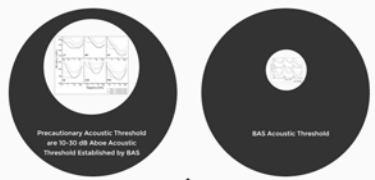
X **3** X

AFFECTED ANIMAL POPULATION



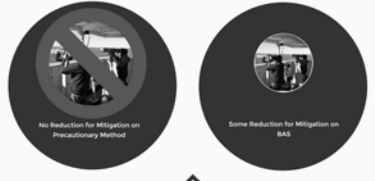
X **4** X

ACOUSTIC THRESHOLDS



X **5** X

MITIGATION



= **Results** =

FINAL RESULTS OF PRECAUTIONARY METHOD VS. BAS



BOEM has analyzed a strawman through the DPEIS by relying on unrealistic assumptions as opposed to the best available science as U.S. law requires. The above graphic shows how precautionary assumptions stacked upon each other lead to a multiplicative over estimation of impacts that will never occur.

Total Multiplicative Precautions (short list)
 [Source+Propagation (90-120x)] x [abundance (2x)] x [conservative threshold criteria (100-10,000x)] x [no recovery factor (10-100x)] x [no allowance for aversion (6.7 x Level A)] x [no mitigation (1.1 - 2x)] = 1.3 million to 3.2 billion more takes than the number that would be produced by using average or most likely values for all variables.

SYNOPSIS OF PRECAUTIONARY ASSUMPTIONS

GULF OF MEXICO DPEIS

Bob Gisiner, IAGC

Background	p. 1
Summary of Precautions	p. 2
Recommendation	p. 3
Detailed List of Precautions ..	p. 4-12

BACKGROUND

The BOEM Gulf of Mexico DPEIS is structurally very similar to most recent NEPA analyses for environmental risk from manmade sound in the marine environment. The interaction of the source, the propagation of the sound from source to animals, and the resulting sound exposures interact to produce a calculated estimate of effect, usually stated as MMPA Level A and Level B “takes”, since the MMPA requires that the impact of an activity be quantified in those terms (NEPA and ESA do not have such strictly numerical requirements for estimating impact).

Historically and in this EIS, each element of the model is assessed relative to the available information and a value is selected that is considered sufficiently conservative or precautionary, given uncertainties about the scientific data or about natural variability in factors such as animal distribution, location and movement of the sound source or the sound propagating properties of the water column. Selection of conservative values in multiple steps of the model leads to an outcome that is not an average of the precautionary assumptions, or even an addition of uncertainty, but multiplication of each uncertainty by the uncertainty in the other steps. Simply put, doubling the expected value for four different parts of the model does not double the outcome, nor does it result in a $2+2+2+2 = 8$ -fold increase in the predicted outcome. Instead the effect of multiple precautions is multiplicative, and the outcome is $2 \times 2 \times 2 \times 2 = 16$ -fold more than if the model was run with ‘most likely’ values like averages. Doubling all values out of precaution therefore does not predict an outcome of 200 takes when 100 was the most likely expected outcome, but instead produces an outcome of 1,600 takes.

As we will see from the following quick-look at the GOM DPEIS, there are many more variables in the model than the simple four variable example described above. And the levels of precaution are not simple doubling of expected values, but multiples that may range from addition of some percentage (less than doubling) to increases that are orders of magnitude greater than the “most reasonable” value (orders of magnitude are multiples of ten, such as 10, 100, 1000, etc.). The downstream consequences are also more complicated than the simple two times two example above, with some variables interacting in other than simple multiplicative ways.

For example, use of an 8000 cubic inch sound source rather than the mean or median of sizes actually used (5,600-5,100 cubic inches) would appear to only create a difference of about 30-37%, but that

difference in size produces a difference in source sound level of 3-6 decibels, depending also on the number of elements in the source array. The difference in source level needs to get translated into a difference in the area covered by the sound from the two different sources, because that will change how many animals are within the two respective areas, all other factors being equal. The 33-37% difference in the size of the two arrays translates into an increase of some 45-50% (roughly) in the area exposed and therefore the number of animals taken. That is, if one uses an 8000 cubic inch array as the precautionary standard and that results in a take estimate of 150 individuals, then use of the more likely mean value of 5,600 cubic inches will result in a take of 100 individuals. Needless to say, this is a pretty large downstream consequence from alteration of a single value by what might superficially look like a pretty small amount. As we will see, factoring in the other parts of the model where similar conservative assumptions are exercised results in a prediction of takes that is millions, possibly billions, of times greater than the outcome predicted by using most likely outcomes only.

[for ease of locating information, references to the DPEIS are to the .pdf file page number, not the page numbers on the document itself]

SUMMARY OF PRECAUTIONARY ASSUMPTIONS IN THE BOEM DPEIS

This list includes only the most obvious and clearly unsupported precautionary assumptions of the model:

- Source
 - Extreme array size and number of elements increases exposures by 1.5 to 2 times.
 - Six additional precautionary assumptions were not analyzed.
- Propagation
 - Conservative or simplifying assumptions about the propagating environment add 10-16 dB minimum to the propagated sound.
 - Combined with the precautionary source assumptions, this results in a 90-120 time increase in estimated takes, all other variables being equal.
 - Six additional precautionary assumptions were not analyzed.
- Animal Abundance, Density and Movements
 - NMFS's Stock Assessment Reports ("SARs") and Duke Model differ on average by a factor of 2. A minimum compromise for uncertainty would be to reduce abundance and density estimates by 25% to 1.5 times SAR.
 - Three specific groups showed even more extreme differences, but were not separated in this simple analysis: expansion of Bryde's whale habitat leading to more takes; large increases in numbers of deep divers (beaked whales, sperm whales, Kogia); extremely large increases in pelagic dolphin numbers (over 80 times for two species)
 - Five additional precautionary assumptions were not analyzed.
- Threshold Criteria
 - Level A calculations from SPLrms and SEL used precautionary assumptions that overestimated take by 10-1,000 times. SPLpeak takes were overestimated at least twofold by using 6 dB instead of 15 dB to derive PTS from TTS.

- Level B calculations make generous assumptions about the likelihood of response and assume all exposures that exceed threshold are biologically significant, over-estimated biological consequence by at least 1,000 to more than 100,000 times.
- No allowance for reduced Level A due to behavioral avoidance of the source (reductions of Level A up to 85%).
- No allowance for hearing recovery between pulses (likely reduction of cumulative SEL from a continuous pulse train of 50% or more); no allowance for hearing recovery between passes separated by hours or days (fewer than 1% of successive passes, those within 8 hours or less, will accumulate and trigger Level A criteria).
- Four additional contributors to precautionary over-estimation were not analyzed, including application of weighting functions to impulse SPL metrics.
- Mitigation
 - No reduction in take was allocated for mitigation. While setting a specific value for mitigation may be difficult, it clearly is not zero and therefore some reduction of takes due to mitigation should be factored into the model.
 - Reductions from multiple proposed mitigations were not estimated.
 - Vessel separation and dolphin shutdowns modeled, with questionable effectiveness
 - Increased time/area closures and 10-25% effort reductions were not estimated.
- Total Multiplicative Precautions (short list)
 - [Source+Propagation (90-120x)] x [abundance (2x)] x [conservative threshold criteria (100-10,000x)] x [no recovery factor (10-100x)] x [no allowance for aversion (6.7 x Level A)] x [no mitigation (1.1 – 2x)] =
 - **1.3 million to 3.2 billion** more takes than the number that would be produced by using average or most likely values for all variables.

RECOMMENDATION

Re-calculate takes using average or most-likely values, quantify and report the overall level of uncertainty in the modeling results, and add an agreeable level of precaution to the final results, not the individual elements.

- Maybe double is reasonable?
- A statistical measure of extreme confidence like 3 sigma still covers 99.7% of all possible outcomes (370 times the central value) and is not nearly so unreasonable as the present model
- It seems unlikely that 1 million to 3 billion times the most likely outcome, which covers 99.9999% or more of all possible outcomes, is a reasonable level of 'precaution'.

PRECAUTIONARY ASSUMPTIONS

The Sound Source.

As discussed above, BOEM treats all geophysical surveys as if they were all conducted with the largest arrays in use. The nominal value of 8000 cubic inches is an approximation of the maximum array size currently used in the Gulf, typically 7900 to 8500 cubic inches. Based on a quick survey of IAGC members over the past decade, a little less than one third of all surveys use arrays of that size. The other two-thirds of surveys in the GOM use arrays that range in size from 6000-2000 cubic inches, for a

mean array size of 5600 cubic inches. Since the different sizes are not distributed normally around that mean value (i.e. not a smooth bell shaped distribution), some other value of central tendency, like the median (5100 cubic inches) might be deemed a more appropriate central value. But in any case, using 8000 cubic inch sources for all modeled surveys greatly overestimates actual use.

The source level of a compressed air array increases as the cube root of its volume, all else being equal, so a difference of 8000 and 5600 cubic inches might seem trivial. But we have seen that it is not trivial in terms of the outcome of concern; the number of animals exposed, because of the resulting expansion of the acoustic 'footprint' of the array and the number of animals likely to be found within that footprint.

Furthermore, the modeled array is not only extreme in the total volume modeled, but also in the number of elements within the array. A typical large array of 8000 cubic inches might include 48 elements and sometimes as many as 60, but the BOEM DPEIS used 72 elements. Why is this important? Because array source level may only increase trivially with total volume, but it is directly proportional to the number of elements. An array with 72 elements has double the amplitude of an array of 36 elements; volume and air pressure being equal.

Therefore the combination of using an array at the extreme upper end of normally used array sizes, coupled with a number of elements in that array which also greatly exceeds the average, can by itself produce estimates of takes that are 1.5 to over 2 times as large as would be predicted by using the normal range of array sizes and numbers of elements actually in use. Based on this variable alone one would be justified in taking the final model predictions and halving them. But there are many more conservative assumptions in the model.

Also potentially capable of altering the model outcome, but not addressed in this quick analysis, are:

- The number of source vessels. When multiple source vessels are used they are used at intervals that are similar to a single source. The total acoustic energy is therefore not increased over using a single source operated at the same inter-pulse intervals, but the total area ensonified is slightly increased, depending on the spatial separation of the vessels. This may be compensated by the fact that each vessel is only producing sound every 60 seconds instead of every 15 seconds for a single source vessel). In the BOEM DPEIS, the maximum number of source vessels, four, is used for all surveys that might use multiple sources, even though many of those surveys, such as NAZ, WAZ and coil surveys, might more often use only one or two sources, and rarely use as many as four source vessels.
- Longitudinal tracks were only used during modeling on the slope region of the Gulf, which has the potential to alter sound fields and estimated takes relative to using both lateral and longitudinal tracks typical of most surveys.
- The choice of depth at which the array was towed was set at 8 meters, but other tow depths are common (6 meters is considered the default 'standard') and the choice of tow depth affects the frequency structure and propagation of the resulting sound field.
- The choice of pulse intervals typically varies from 10 to 20 seconds, with the DPEIS selection of 15 seconds being fairly typical. A four source survey would result in each source operating at 60 second intervals.

- Durations of surveys were not clear. On page 3-23 a nominal survey duration of 10.5 months was applied to all surveys, but elsewhere in the document, e.g. D-177, the survey durations varied.
- Survey areas, line separations, and other parameters on page D-177 appear to be in the same conservative direction as the array size and element count; suggesting that line spacing and area covered by a modeled 2D, 3D, WAZ or other survey may be greater than average and thus produce elevated sound exposures and take estimates.

Sound Propagation.

BOEM is to be commended for having run some preliminary models (Phase I modeling in Appendix D) to quantify some of the consequences of using simplifying or conservative assumptions (e.g. see pages D-100; D-106; D-113; D-122). Therefore we can assign some quantities to what is otherwise a very complicated variable, the day-to-day fluctuations in wind, temperature, currents, and other factors that affect sound propagation through the water between the sound source and the animals of concern.

The modeling of sources of variance yielded a 10 decibel difference in sound transmission between an average sound speed profile in the water and the extreme case used in the model (10 decibels is an order of magnitude or ten times the average). Use of hard or median properties for the seafloor added another 4 dB over the most likely outcome, with most of the Gulf being covered with soft sediment that is a poor reflector of sound). Use of a flat sea surface instead of a rough sea surface adds another 2 dB minimum, resulting in a conservative value of over-estimated propagation of 16 decibels or 60 times (!) the amount of energy propagated than would be expected on average. Add this to the conservatism we saw for the source itself, and we already have an ensonified area and number of animals ensonified that would be 90 to 120 times the reasonably expected exposures. A “best reasonable estimate” of 100 would become an estimate of 9,000 to 12,000 from these two precautionary measures alone.

Also potentially capable of altering the model outcome, but not addressed in this quick analysis, are:

- A single uniform propagation regime is used for the entire deepwater zone (Zone 7). Assumptions of flat bottom and maximum depth are not met in all cases and propagation is therefore subject to additional over-estimation factors in the deep water region.
- Survey days and survey effort appear to have been evenly distributed across the area and seasons, although this is likely not the case for actual survey effort. Theoretically this might average out, but it is also possible that fewer actual survey days in winter, when propagation conditions are best, will lead to actual surveys producing fewer takes than the model estimated by using equal division across winter and summer.
- SPLrms for longer range propagation is derived from the SEL values produced by the model. As JASCO acknowledges (D-49), modeled SEL at range tends to over-predict SPLrms as the signal is spread over time. Time resolution of the model also hinders accurate modeling of SPLrms based on proper analytic units such as rms.90 (average sound pressure over the time than encompasses 90% of the total pulse energy).
- Single frequency long range propagation modeling leads to increased errors in pulse properties with range. For modeling purposes a single frequency at the center of each 1/3 octave band is treated as ‘representative’ of all the sound energy within that frequency band. In practice, selection of a non-representative frequency (e.g. located at a ghost notch or filtered by

propagating environment) can lead to errors in weighted SEL values needed for determining effects thresholds.

- Use of “maximum over depth” in some model estimates of take creates a worst-case scenario where all individuals are assumed to be at the depth of highest sound exposure all the time. It is not clear in what context JASCO used maximum over depth as a simplifying step in modeling, but it will always greatly over-estimate takes when used.(D-296)
- Ranges to effect for mitigation monitoring and shutdown (but not for take estimation?) were calculated from unweighted values, whereas hearing frequency weighting needs to be applied to SEL threshold values (JASCO also seems to have applied weighting to SPLrms data, which may also be inappropriate – see section on Threshold Criteria, below).

Animal Abundance, Density and Movements.

This is a complex set of variables, with precautionary assumptions literally varying for each of the species modeled. But overall, the use of the Duke model creates an increase in predicted abundance that is about double the official NMFS abundance numbers in the SARs. Some additional modifications in the use of those data by JASCO add to the conservatism (over-prediction) by a fractional amount, in most cases.

The Duke model is a novel approach to forecasting animal distribution and density from historical correlations with readily available environmental data, typically not the true environmental predictors like prey patches or features like fronts, currents and eddies that are less easy to predict or track. As such, there are some things that the Duke model likely does better than the SARs, such as predicting average abundance of pelagic dolphins that move in and out of the US EEZ from one survey to the next, leading to large sampling variability. However, other similar models for the US west coast, for the UK, and for global oceans, have shown some extreme misses in their predictions, an expected outcome for models in the early stages of development for species that are infrequently counted and whose habits are still poorly understood relative to land animals for example. Too great dependence on a single very new model like the Duke model can therefore be expected to result in some improvements on the SAR or US Navy NODES data resources, but is also likely to produce some extreme “misses”. Species with wide disparities between historical data and Duke model predictions include Atlantic spotted dolphins (from no historic estimates in SAR, to over 45,000 animals predicted by the Duke model, making them the third most abundant species in the Gulf, virtually overnight. Duke predictions of Clymene dolphin abundance are about 85 times higher than the SAR figures, Kogia numbers are increased by a factor of 12, rough-toothed dolphins by a factor of 8 and killer whales by a factor of more than 7. These are radical changes to our understanding of marine mammal abundance in the Gulf that require more than blind acceptance of a new model simply because it is generally “better” than the SARs (D-65).

Some of the animal abundance and distribution modeling may be unfamiliar and counter-intuitive to the average reader. The model in the BOEM DPEIS uses electronic representations of individual animals, or ‘animats’, to construct time series of exposure for a realistic number of animals, ‘behaving’ in realistic ways, so that the animats move about and dive at realistic speeds and distances relative to the sound source, which is also moving. As might be expected, capturing the complexities of animal behavior and all of the other variability of the sound source and the propagating ocean is impossible, so certain statistical techniques are used to smooth out some of the variability in outcome that can occur just from sampling errors alone. These techniques, such as over-populating the sound field with hundreds or

thousands of times more animats than animals (and then reducing the result proportionally to the actual population) do not affect the outcome but do reduce the likelihood of random extreme variation in outcomes. Monte Carlo methods, or running the same simulation over and over hundreds or thousands of times also helps smooth out the distribution of outcomes. Because the animats are seeded randomly for each model run and because they run independently according to user-specified rules, no single model run will produce the same result (as in real life) and so the model must be run many, many times in order to arrive at a statistical average. This process, which is widely accepted as statistically legitimate and even necessary to producing realistic model outcomes, should not be confused with the selection of variables to put into the animat models and Monte Carlo simulations: those variables, like the source and propagating environment variables, can and do produce biases in the outcome, as will be discussed in detail below.

Animal survey data for the Gulf of Mexico is sparse overall, and therefore statistically weak. Various techniques have been applied to the data to generate estimates of population abundance, density and distribution. The official NMFS Stock Assessment Reports (SAR) are an official estimate by NMFS of the best estimate of population abundance in a region, but they do not offer information about animal distribution, forcing the user to either evenly distribute the animals even across the habitat, even though it is known the animals do not use all of the habitat equally. Alternatively, the modeler can generate 'expert' assumptions about how the animals use the habitat, but those assumptions can create unrealistic estimates of take if the assumptions are not good. For example, JASCO placed all sperm whale animats in water depths greater than 1000 meters because sperm whales are deep divers that tend to occupy deep water. However, a look at the data show that many, if not most, sightings of sperm whales occur in water depths of 400-800 meters, and this is largely confirmed by tagged whale data from the BOEM SWSS research project.

Alternative to applying a population estimate for the entire Gulf evenly or selectively across the Gulf is to use habitat features correlated with animal sightings to predict where animals are most likely to be seen based on 'suitability' of habitat. The statistical aspect of this process is quite well worked out as in the Duke University model applied in the BOEM DPEIS, but there are still 'human-in-the-loop' decisions that can affect model outcome. Something like the Duke model is therefore a "work in progress" in which model predictions may be more or less accurate, depending on the habitat variables available to the modeler and whether they are in fact strongly predictive of where animals will in fact be. A few "warning flags" about the novel predictions by the Duke model are:

- The distribution of Bryde's whales across the entire GOM shelf edge by the inclusion of "unidentified baleen whale" data as Bryde's whale data. Actual observations suggest that the Bryde's whales are confined to a relatively small area of habitat around DeSoto Canyon in the Eastern Planning Area (EPA), and in fact this site has been selected as a special mitigation zone. But the Duke model "places" Bryde's whales across large swaths of area where they have never been seen, greatly elevating the predicted takes in the WPA and CPA by what are probably orders of magnitude (hundreds or even thousands of modeled takes not supported by the real data).
- Several species for which there are low sighting data produced low likelihoods of occurrence across vast areas of the Gulf in the Duke model, which were further simplified to even probabilities across entire modeling zones: false killer whales, killer whales and several other species are therefore equally likely of being taken wherever surveys occur, when in reality there

are probably higher and lower areas of likelihood. It is hard to predict how the “fuzzy” predictions of the Duke model, and the modifications of the JASCO model affect take outcomes but generally speaking, these species tend to have predicted abundances derived from Duke density models that are among the highest deviations of the Duke model from SARs (e.g. 6 times SAR for killer whale, 14 times SAR for pygmy killer whale).

- Deep divers that are seldom seen during visual surveys were subjected to some assumptions about sightability that greatly elevated predicted abundance and greatly expanded habitat occurrence over the SARs; 12 times the SAR for Kogia and about 8 times the abundance for beaked whales (based on Cuvier’s beaked whale modeling). This radical departure from historical estimates of abundance is somewhat consistent with comparisons elsewhere (Atlantic, California, Bahamas, eastern north Atlantic sites), but on the high side. It is also higher than predictions by passive acoustic surveys and modeling by Hildebrand, Moretti, and others. Just how “precautionary” the Duke model is for these species is hard to estimate at this time, but it is fairly clear that the Duke model is over-predicting deep diver abundance and distribution leading to excessive estimates of takes.

Additional aspects of animal distribution and movements information that may lead to over-prediction of takes include:

- Assumptions used to deal with the large number of modeling cells that yield zero abundance and zero takes can lead to over-prediction of takes. JASCO notes that the outcomes that yielded a probability of Level A take greater than one (1) was less than 0.2% (i.e., only 2 out of a thousand model results yielded a take of 1 or more animals)(D-123, D-129). The average number of Level A takes was 0.0195 or about 2 per 100, the result of a very small number of model outcomes that yielded more than one Level A take.
- The 3MB model used to set swimming and dive parameters for the animals rely on limited data, quite often from related species studied at different locations than the Gulf. It is therefore hard to predict whether the overall effect of the values entered into the 3MB model resulted in over-prediction of takes or under-prediction, but the most likely outcome is that the values used were conservative, precautionary values that added to the over-prediction of takes.
- The modelers assumed that the animals did not undergo long-term, large-scale movements. Certainly it is widely assumed that animals do not migrate in and out of the Gulf in great numbers, although sperm whales, a variety of baleen whales, and probably many other species do move between the Gulf and Atlantic or Caribbean. But the currently available data do not offer enough information, especially for winter months, to determine whether other species exhibit moderate north-south or east-west movements with the seasons similar to the inshore-offshore movements of estuarine bottlenose dolphins in the late winter and spring, or during other seasons. It is well known that large numbers of animals may travel from east to west, tracking the warm core rings spun off by the Loop Current, but this phenomenon is not sufficiently documented to inform the model.
- JASCO modeled the effect of group size on outcome. They did not see a significant difference in average outcome from using single, ungrouped animals, although they did note that obtaining the same outcome regardless of group size means that there will be more zero-take model runs as group size increases (D-135; D-174).

- As animats move over time, and if animats are removed once they exceed a take threshold, then the probability of take will decline over time as there are fewer and fewer animats in the field. JASCO used a common technique for keeping the number of animats constant and thus keeping probability of take constant over time by introducing new animats on the opposite side from which an animat had just left (D-49; D-82; D201). It is also not clear if and how animals were removed or replaced once taken. This is especially important where animats were left in the field to accumulate SEL for days or weeks. There are other nuance to re-seeding the sound fields that can result in skewed results, but a full treatment is beyond the scope of this short review.

Take (Acoustic Risk) Thresholds.

Both Level A and Level B thresholds range from more than 100 times higher than best scientific evidence to over 100,000 times higher. There are multiple conservative assumptions that produce this extraordinary outcome: the assumption that exposure equals take, the conservative linkage of permanent hearing decrements to temporary hearing decrements, assumptions about the accumulation of hearing effects over time without recovery between exposures, and assumptions about how many of these exposures actually have any meaningful biological consequences.

The MMPA defines “harassment” with reference to two categories: Level A harassment (potential to “injure”) and Level B harassment (potential to “disturb”). NMFS applies acoustic thresholds to estimate the amount of harassment for each category that may result from an activity. The acoustic thresholds are often mistakenly assumed to mean that an injury or mortality will occur, with 100% of the exposed animals being injured or killed, or that 100% of exposures at behavioral thresholds will cause behavioral change and that the consequences of the change are a significant and meaningful loss of food, energy, or some other key biological function. In fact, both thresholds imply a probability of there being an effect upon exposure. BOEM was quite emphatic in stating that exposure does not equal take, but the model still treats any exposure that exceeds threshold as a take. This is the first of many features within the Acoustic Risk Threshold part of the model that lead to large over-estimates of take.

Additionally, the DPEIS is not always clear when and how animals are removed from the model to prevent multiple takes of the same individual (e.g., being counted as a Level B take and then exceeding Level A criteria and also being counted as a Level A take). Removals need to be handled carefully to prevent gradual reductions of model ‘animats’ in the sound field as “taken” animats are removed.

The most recent threshold criteria for Level A takes are based on empirical data for the threshold at which a temporary decrease in hearing sensitivity (TTS) occurs across a narrow frequency range of hearing (NMFS, 2016; Finneran, 2015). BOEM also variously cites NMFS 1995; Southall et al 2007; Finneran and Jenkins, 2012: it is not yet clear which criteria they plan to use in the Final EIS, making analysis of the DPEIS difficult. JASCO in Appendix D modeled the 1995 threshold

The simplest Level A threshold, long since superseded by scientific data but still in use by NMFS, is 180 dB SPLrms (root mean squared – an average over some specified time period, and since it is an average of a logarithmic scale, dB, a square root of the mean of summed square values is required rather than a simple average). Despite being outdated by more than 20 years, BOEM still modeled takes using this hyper-precautionary threshold. This provides a threshold that is some 10 to 1,000 times more precautionary than the current best data derived from TTS thresholds for both impulse and tonal sources; the peak SPL or the summed sound energy over time (SEL), although we shall see later in this

section that the SEL has also been subjected to additional conservative assumptions that render it some 10-1,000 times more conservative than SPLpeak. The values of 10 to 1000 times are based on SPLpeak thresholds of 230-200 dB SPLpeak, and an estimate of 180 dB SPL rms being comparable to 190 dB SPL peak (200 dB is ten times 190 dB and 2230 dB is one thousand times 190 dB on the same scale, in this case SPLpeak).

Permanent Threshold Shift (PTS) is not tested directly, and is assumed to occur at a level above TTS consistent with marine mammal TTS data and human/lab animal data. PTS, as for TTS, is not a threshold for deafness or major loss of hearing, but for a small decrement of hearing sensitivity within a narrow frequency range, a 'hearing notch'. This is a liberal interpretation of "injury", since the original sense of the term in MMPA was intended for animals that lost eyes, limbs, or suffered broken bones and spinal injuries during interactions with fisheries or due to being struck by ships, shot at, or otherwise seriously injured.

The criterion is rendered even more conservative by the use of a 15 decibel difference between TTS and PTS when the data from other species, including humans, indicates PTS onset at 20-40 dB above TTS threshold. Since even this conservative addition of only 15 dB to TTS produces thresholds of PTS above the source level of the sound source, Southall et al (2007) and subsequent criteria (NMFS 2016) have arbitrarily set the SPL peak metric for PTS at a mere 6 dB above TTS threshold, or almost ten times lower (and therefore productive of ten times as many exposures and takes).

The best predictor of TTS and therefore PTS, at least for tonal sounds, is SEL, a product of both signal intensity (not amplitude) and duration. It is not clear how well this relationship holds up for an impulse signal like compressed air (CA) sources, so relationships for tonal signals are applied to impulse thresholds. SEL is referenced to a time duration, typically one second, but for sounds less than 1 second long, like impulse sounds, SEL does not always hold up.

Furthermore, models like the BOEM DPEIS treat multiple exposures separated by many seconds or even hours or days, as if the sound exposure had been continuous. Near the source a geophysical survey produced 0.1 s of sound every 10-20 seconds, expressed as a "duty cycle" of approximately 1-2%. Further from the source the energy in the impulse may spread in time, increasing the duty cycle, but at ranges meaningful for Level A determination, the duty cycle remains below 10%, meaning that 90% of the time the ear is capable of recovering from some of the induced fatigue or threshold shift. Early TTS studies noted that the animals recovered from low levels of TTS within seconds or minutes, and subsequent ongoing studies are consistent, suggesting that it make take considerably more intermittent exposures to produce TTS or PTS than would be predicted by simply adding up multiple pulses as if they all occurred in succession without any time for recovery (In other words 12 pulses of 0.1 second duration each are treated as a continuous 1.2 second pulse and not what they are, which 1.2 seconds of sound within ten 15 second intervals or 150 seconds of ambient sound only).

The case for some sort of recovery function is even stronger for intermittent passes of an array that may be separated by 4, 8, 16 or more hours, in which case hearing is likely fully recovered and no accumulation of SEL should be carried forward. NMFS has traditionally carried SEL forward for 24 hours, a scientifically unwarranted precaution that leads to over-estimations of take by another 10-100 times, if not more. The current modeling exercise suggests in places that SEL accumulation was carried forward even further for weeks or even months. Appendix K offers annual summations of SEL and a

similar cumulative sound metric, Leq, for an entire year. This is not scientifically justified and leads to overestimates of takes by tens or even hundreds of thousands of takes, both Level A and Level B.

Because we do not have a specific recovery function to offer yet, BOEM has not included ANY recovery in their model, whereas a model consistent with best available science should include at the very least a recovery function consistent with human and other mammalian hearing. Absence of a recovery function is likely adding another 10 to 100 fold over-estimation to Level A take.

Thresholds for Level B take have been difficult to derive, although more and more publications have offered data and a proposed threshold function: most of these papers are not cited or reviewed in the EIS, or in the reference used by the Phase II model (Appendix D), which is an unpublished contract report to a California utility company (Wood et al 2012). Wood et al (2012) also presents a potential conflict of interest, since the author of Appendix H (Brandon Southall) is also a co-author of the Wood et al (2012) report. The industry is sponsoring a review of the behavioral effects literature, but that review will not be published in time to inform the current PEIS.

In any case, the Wood et al recommendation was a step function of increasing behavioral response at increasing exposure levels, and in this respect Wood et al (2012) is similar to other Level B risk assessments like the US Navy Programmatic EISs (2009; 2014, draft 2017). All recognize that out of a given group of animals, a few will respond at low levels, with increasing recruitment up to an exposure level that approaches thresholds for TTS and PTS. BOEM also applied the outdated NMFS 1995 Level B threshold of 160 dB SPLrms.

The outcome of applying any of these thresholds is the generation of tens of thousands to millions of Level B takes in which the vast majority of “takes” are transitory disturbances that last hours or a day or two and have no impact at all on foraging success, breeding success, growth, health or any other biologically meaningful metric. The hypothetical possibility that cessation of feeding for a day or movement a few miles from the source, or a change in vocal behavior “might” lead to biologically meaningful consequences means that the model calculations are treated as “takes” under MMPA even though all acknowledge that exposures don’t equal takes and takes do not equal meaningful effects. The development of the PCOD model, and population of that model with data, confirm that behavioral disturbance from sound needs to be reduced to a “biologically significant” number that is a fraction of the counted exposures; anywhere from a conservative 1% to a more realistic 0.001% or less. In other words, estimates of thousand to millions of takes in the model are like to result in fewer than 1 to 1000 takes with actual biological consequences. These numbers, spread across large areas like the Gulf and multiple species are mathematically too low to result in a population level consequence from Level B takes (e.g. elevation of baseline mortality, decrease in baseline fecundity). This is consistent with history, where more than five decades of regular geophysical survey effort all over the globe has not generated any evidence that observed behavioral responses to the sound has any biological consequence.

Calculation of grossly inflated Level B take numbers in the GOM DPEIS is not consistent with current best information, and greatly over-estimates the consequences for the stocks of marine mammals being managed.

Finally, behavioral aversion was not applied to this model, even though a preliminary Phase I model showed that even small amounts of aversive greatly affected both Level A and Level B takes. If

behavioral aversion is a trigger for Level B take then it cannot subsequently be omitted from modeling of Level A takes, since the low level exposures that trigger aversion will reduce the likelihood of higher levels of exposure.

Additional aspects of threshold assessment that may lead to over-prediction of takes include:

- Conservative thresholds for low frequency whales. Current conservative thresholds for whales increase the estimated Level A and Level B takes for these species by some 4 to 10 times over best available science predictions. Arguments for unreasonable precaution in the face of uncertainty are not consistent with mammalian auditory biology in general.
- JASCO applied novel uses of weighting functions, using outdated M1 weighting functions from Southall et al (2007) on SPL thresholds, where weighting functions should not be applied.
- Kogia are considered to have the same hearing thresholds as porpoises, even though they are unrelated and the evidence for high sensitive is based largely on data about Kogia vocal behavior and some inconsistent evoked potential audiometry.
- Modifications to beaked whale Level B thresholds unique to this EIS are applied without justification other than precaution.

Mitigation.

BOEM allowed no reduction in the estimated take for mitigation. This is a highly over-conservative assumption, justified by the relatively little data available on mitigation effectiveness, together with the likely variability in mitigation effectiveness between mitigation service providers, types of marine species present, monitoring conditions and other variables. Some analysis on page D-151 suggests ranges of observer mitigation effectiveness from near zero to over 70%. One cannot require mitigation and at the same time treat it as if it provides no reduction in takes. BOEM needs to come up with some metric for the benefits from required mitigation. A variety of other possible mitigations have been proposed in the GOM DPEIS, ranging from alternative source technologies and active acoustic mitigation to time/area closures, vessel separation schemes, and reduced quantities of geophysical survey effort of 10-25%. At least two of the suggested mitigation measures, vessel separation (Table ES-1; page 1-10; page 2-10; B-32; page 2-38; and D-162-163) and shutdowns for dolphins approaching vessels or bowriding (p. 2-24) offer the possibility of actually increasing takes through expansion of ensonified areas (vessel separation), or extremely high increases in shutdowns with associated prolongation of survey effort (and sound exposure) to achieve survey completion (an estimated 35-40% increase).

ATTACHMENT B

PSO Data 2009 - March 2014: Dolphin Sightings

Provided by CGG based on MMO reports submitted to BOEM during this period representing approximately 23% of total vessel activity days in the GOM since 2009.¹

Species Identification		
% of Unidentified Dolphin	69%	In many reports, PSOs contribute sea state, distance, or the sun's glare as a key factor for not being able to identify species.
% of Identified Dolphin	31%	
PAM		
% of PAM Detections	60%	PAM detections accounted for over half of the total dolphin sightings/detection reports. However, only 3% of the acoustic detections made identified a specific dolphin species. The majority of this small percentage is due to the PSO visually confirming the acoustic detection.
Source Activity Comparison		
% of sightings and/or acoustic detections – source active	54%	The frequency of sightings and acoustic detections are proportional regardless of whether the source is active.
% of sightings and/or acoustic detections –source silent	46%	
Animal Behavior		
% of sightings when bow-riding was observed (active or silent)	12%	The data indicates source status (active or silent) had no impact on dolphin bow-riding. The number of dolphins observed when the source was silent was proportional to when the source was active.
Average Distance of Animal at Initial Sighting	560m	Average sighting distance between 500m and 800m.

PSO Data 2009 - March 2014: Turtle Sightings

Provided by CGG based on MMO reports submitted to BOEM during this period representing approximately 23% of total vessel activity days in the GOM since 2009.²

Total Sightings	335	335 sea turtles were observed overall.
Average Distance of Animal at Initial Sighting	42m	Analysis of turtle sightings indicates observations are typically within 100m.

¹ Estimated calculation based on level of activity from January 2009 to March 2014 from IHS SeismicBase Vessel Search Database.

² *Id.*

ATTACHMENT C

Targeted Detailed Comments — IAGC/API/NOIA/OOC

No.	Page	DPEIS Language	Comment/Question
1	1-9	This Programmatic EIS is being prepared to serve as the programmatic NEPA analysis from which BOEM will tier its site-specific NEPA analysis for BOEM to permit and authorize G&G activities under the OCSLA.	This indicates that site-specific EA's will be required for G&G activities. The industry would appreciate greater clarity on what the future permit application and supporting NEPA process will look like for individual applicants.
2	1-15	Exposure Versus Take BOEM and NMFS do not believe that every exposure to sound results in a "take". ... And/or, in extreme cases, habitat avoidance or even death.	Saying habitat avoidance is an extreme case and including it alongside "death" is not appropriate and misleading. Neither long-term nor permanent habitat avoidance has been observed in conjunction with seismic surveys. No mortalities have ever been confirmed, despite extensive effort to detect such effects. It is unreasonable and not consistent with best available information to infer these effects are possible just because they are imaginable. Contrast with sonar sound, in which association with strandings and mortalities are well-documented. Just because one sound source might have an effect does not mean that other very different sources, used in very different contexts, might have the same effect, especially when the sources in question have been in widespread use for over 50 years.
3	1-16	Significant strides have been made in quantifying the effects of noise on marine mammals (cites Atlantic final PEIS)	Using the Atlantic G&G PEIS as a reference for showing that significant strides have been made in quantifying the effects of noise on marine mammals is not useful or appropriate. That document used a similar approach to estimated exposures as used in this DPEIS for the GOM, but there are no data to indicate how accurate these methods are in representing actual exposures or impacts from the modeled activities.
4	1-16	The efficacy of the proposed mitigation finally selected for implementation as part of the Record of Decision will be examined under the Adaptive Monitoring Plan discussed in Chapter 1.2.3 above.	Text in the Adaptive Monitoring Plan section of Chapter 1.2.3 does not include any materials that address the efficacy of proposed mitigation measures.
5	2-33	Therefore, depending on whether or not a collision did occur, nominal to moderate impacts are expected for Alternatives A-F	The potential for a single mortality from a vessel strike causing a jump from nominal to moderate impact is inconsistent with arguments made on the previous pages that changes in impacts to a single species/stock are insufficient to warrant a change in

			the significance level when considering all species across 10 years.
6	2-35	Impact to MPAs... from active acoustic sound sources range from nominal to moderate for all alternatives except Alternative G	Why would impacts reach the level of moderate for Marine Mammals inside MPAs when MPAs represent a pretty small area inside the AOI? Some might argue that MPAs contain unusual densities of species of concern or contain critical habitat, but neither of these assertions are supported by the best available data (e.g. Duke density maps or what data we have from tags and surveys concerning breeding, foraging and other vital activities).
6a	3-18 and D-25	8000 cubic inch array with 72 elements used as standard	Actual distribution of array sizes ranges from 8400- less than 2000 with a mean value of 5600 cubic inches. Assuming the use of an 8000 cubic inch array overestimates reasonably expected source energy for a typical year or decade of effort. Additionally, using an excessively high number of elements in the array (the PEIS assumes the 8,000 cubic inch array is composed of 72 elements, when it would more likely be composed of 48 to 60 elements) further overestimates the expected source amplitude.
9	4-54	Fitness level Consequences of level A and Leve B Exposures	The analysis of fitness level consequences in this section involves comparing the number of total animals in a hypothetical 7,000 km ² survey area to the number animals that would be within the acoustic threshold distance at any one time. This seems to have been done to compensate for the fact that exposure modeling was conducted for a 24hr period and discusses the probability of an animal experiencing multiple exposures to Level A acoustic energy, but the logic behind this approach is not at all clear. This should be more fully explained.
10	4-56	There is still a very small potential for an animal to be in the acoustic footprint, thus an even smaller probability of experiencing multiple exposure to Level A acoustic energy. It is not anticipated that any animal would experience fitness-level impact from level A exposures.	The argument made here that seems to be predicated on fitness level consequences coming from multiple exposures of the same individual above Level A criteria is not clear. There is not support for the final sentence and there is not an initial logical argument made for how multiple exposures and not a single exposure would lead to fitness level consequences or why the traditional density x area calculation was used for this assessment rather than the results of exposure modeling.
11	4-57	Minimum survey spacing will ensure that marine mammals will have areas where sound levels will not meet the threshold of harassment...	No support for this is provided in the document and, to our knowledge, none exists in the scientific literature.
12	4-124	"In March 2015, NMFS published a proposed rule to	The final rule was published April 6, 2016 (81 FR 20058). The North Atlantic DPS is listed as

		remove the current range-wide listing for green sea turtles and to replace it with eight DPSs as threatened and three as endangered. Green sea turtles found in the GOM are part of the threatened North Atlantic DPS (80 FR 15272). The NMFS is currently compiling comments on the proposed rule, with a final rule expected to be published in late 2016."	threatened. Critical habitat is not determinable at this time but will be proposed in a future rulemaking.
13	D-25	For geotechnical source propagation modeling, a fixed +10 dB factor was used to convert SEL to rms SPL.	Although a 10 dB adjustment is common, there is insufficient detail provided here to support that it is appropriate for the HRG sources. This is especially true at greater ranges where the impulse shape of the signal is changed to an amplitude modulated signal over a variable time window.
14	D-35	Exposure estimates for cSEL metric were based on the exposure history of the animats (this is appropriate). Exposure estimates for peak SPL were based simply on the how many animats came within the range of the threshold	Using only the range value would appear to neglect the depth of the animat at the time it was within the (assumed maximum-over-depth) range. If slant range and 3D peak SPL sound field were used, this should be specified.
14a	D-42	Max value in the downward direction is used to estimate exposure	AASM generates a vector-specific level at any angle and in fact downward energy does not make a substantial reflective or refractive contribution to the longer range propagated signal, so this use of the downward maximum overestimates exposure.
15	D-44 D-45	red boxes in Figures 13 and 14 within which densities are calculated from the NODES database	These boxes do not appear to show the same geospatial shift as shown for the two survey areas in Figure 10.
17	D-49	Animats coming within the 230 dB (18.7 m) and 200 dB (575.4 m) isopleths were counted as exposed	Not enough detail is provided, but if the ranges to animats used were simply horizontal distance rather than slant-ranges, then this calculation assumes maximum over-depth, which would result in more exposures of deep-diving marine mammals than is realistic.
18	D-84	Sound Speed Profile Analysis Results.	There is insufficient description of how the Median and standard deviation values shown in Table 30 were calculated to interpret the results. Presenting differences between worst-case and median models in terms of dB at a maximum distance to a threshold is not as useful as showing actual variation in distances to that threshold or areas exposed above the threshold. Table 30 shows that the median difference between

			“worst-case” and “median” SSPs in the Shelf Zone result in +0–15 dB at/near the 160 dB range. +15 dB SPL would be a very large distance and therefore difference between median and worst case results.
19	D-99	Sea State. propagation in sound speed profiles that cause surface sound channels can be quite strongly affected, as sound can be scattered out of the duct.	No actual analysis was performed to assess the variability in model results caused by increasing sea state. All modeling assumes perfect reflectance; however, this statement makes it clear that the long-distance estimates resulting from the presence of sound channels in unrealistic in high sea states, and perhaps moderate, however, no effort is made to quantify this. This should have been quantified and/or a moderate (median) sea state used in all modeling scenarios.
	D-174	Neither mitigation nor aversion are used to adjust take estimates	The DPEIS builds a strong case that some sort of mitigation reduction or aversion effect should be incorporated and would make a considerable difference in the take estimates, but neither well-established phenomenon is taken into account.
	D-162	Stand-off distances	The JASCO Phase I model clearly shows that separation schemes and ‘corridors’ are most likely not meaningful or used by the animals, and that the effect of such schemes is more likely to increase exposure, especially Level B SEL. We are hopeful that this proposed added mitigation will therefore be removed from consideration.
	K-32	Hypothetical treatment of “lost communication space”	This is a novel and poorly supported idea within the research community and is not well enough developed or supported by data to be treated as a meaningful regulatory concept.
	K-7	Introduction of L_{eq} metric in addition to SEL and SPL	No formula or rationale for use of L_{eq} is provided. L_{eq} is not used in the rest of the PEIS. Introduction of a new, unjustified metric is not warranted.
	K-18	Introduction of the concept of “listening space” and a simplistic approximation of biological de-masking is unwarranted.	This is a novel and scientifically controversial idea; it is not mature enough for regulatory application. A DPEIS is not the place to introduce a radically different concept for UW sound regulation: this should be further developed and vetted as a policy or regulatory rule-making on its own before it is considered solid enough for regulatory application.
	K-22	Introduction of a novel metric, cumulative SEL and L_{eq} for an entire year.	This is not an accepted ISO or ANSI standard, and for good reason. Concepts of hearing recovery, effective quiet and other basic hearing phenomenon would need to be considered and are not, leading to absurd expressions of acoustic energy “accumulation” that are biologically impossible and biologically meaningless even if possible.

ATTACHMENT D



Via Electronic Mail

May 2, 2014

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Subject: Comments of the American Petroleum Institute, the International Association of Geophysical Contractors, and the National Ocean Industries Association on NOAA Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys*

Mr. Baker,

This letter provides the comments of the American Petroleum Institute (“API”), the International Association of Geophysical Contractors (“IAGC”), and the National Ocean Industries Association (“NOIA”) (collectively, the “Associations”) on the National Oceanic and Atmospheric Administration (“NOAA”) Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys* (“Observer Standards”). We appreciate your consideration of the comments set forth below.

API is a national trade association representing over 600 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers. API is a longstanding supporter of the Marine Mammal Protection Act (“MMPA”) regulatory process as an effective means of balancing and rationalizing responsible oil and gas activities with the conservation of marine mammals. We continue to support issuance of incidental take authorizations under the MMPA because, for example, it has been demonstrably effective in the Arctic in protecting marine mammal species without unduly and unnecessarily burdening industry.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

NOIA is the only national trade association representing all segments of the offshore industry with an interest in the exploration and production of both traditional and renewable energy resources on the U.S. Outer Continental Shelf (“OCS”). The NOIA membership comprises more than 275 companies engaged in a variety of business activities, including production, drilling, engineering, marine and air transport, offshore construction, equipment manufacture and supply, telecommunications, finance and insurance, and renewable energy.

General Comments

The Associations commend NOAA’s National Marine Fisheries Service (“NMFS”), together with the Bureau of Ocean Energy Management (“BOEM”) and the Bureau of Safety and Environmental Enforcement (“BSEE”), (collectively “the agencies”) for providing recommendations for a Protected Species Observer and Data Management Program (“PSO program”). We understand that a technical memorandum is used for timely documentation and communication of preliminary results, interim reports, or more localized or special purpose information that may not have received formal outside peer reviews or detailed editing and that there is not a formal comment process. It is evident, however, that the agencies intend the recommendations in this technical memorandum to be immediately implemented for G&G surveys in the US OCS, and have incorporated the Observer Standards in the Atlantic OCS Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Areas Final Programmatic Environmental Impact Statement (“Atlantic PEIS”). The Atlantic PEIS “Seismic Airgun Survey Protocol” requires that protected species observers complete a PSO training program “in accordance with the recommendations described in [the Observer Standards].”

In general, we are supportive of a process to standardize PSO eligibility requirements, training courses, data collection and reporting requirements. After carefully reviewing the Observer Standards, however, we have identified a number of concerns and opportunities for improvement, which are briefly summarized below and described in more detail in the following sections of this letter. Although we appreciate the agencies’ attempt to clarify and standardize observer guidelines and requirements, it is imperative that the agencies consider public input on the Observer Standards and make the revisions necessary to ensure that the standards are workable, accurate, and appropriate. The standards should encourage adaptive technology, such as remote visual and acoustic monitoring and infrared technology, reduction of health and safety risks, and also the use of an updated reporting form that would be able to provide substantive data from observations to substantiate the implementation of appropriate mitigation measures.

The Associations' comments are intended to be constructive and further the goal of improving the PSO Program for G&G surveys consistent with the best available science and technology, clearly written, transparently implemented, and fully informed by the public.

Role of the US Fish and Wildlife Service

With jurisdiction over several marine mammals, the US Fish and Wildlife Service (USFWS) is an important stakeholder to the PSO process; however, it does not appear that USFWS was a part of the Protected Species Working Group or that USFWS provided any input into the development of the Observer Standards. While the Observer Standards provide recommendations of report requirements for PSO sightings of polar bear and walrus (*see* p.31), the Observer Standards specifically exclude these species and all other species under USFWS jurisdiction from the purview of the standards (*see* p.v). A comprehensive national PSO program necessitates the review and input of the USFWS in addition to NMFS.

Establishment of a PSO Standardized Training Program

The Associations generally support the establishment of a standardized training program for PSOs and are interested in working with the agencies to ensure that appropriate standards are set for the "approved" vendors. We are concerned, however, that some of the recommendations for the program are based on unsupported assertions that current PSO training and reporting is inconsistent. The agencies should provide context to these assertions so that stakeholders can better understand the improvement the recommendations seek to achieve.

The Observer Standards recommend that any standardized training program should not only provide training in mitigation and monitoring requirements, but also provide health and safety considerations. The Associations agree. All PSOs should be trained to ensure complete compliance with all applicable safety procedures. A standardized training program should cover knowledge of the heightened risks working offshore on a vessel in remote locations with no or limited shore side infrastructure, and should teach personnel how to minimize risks. Training should also include information on safe travel, logistics, onboard medical infrastructure, and security including International Ship and Port Facility Security (ISPS) information.

As the Observer Standards acknowledge, many geophysical companies will also have specific requirements related to health and safety risks associated with their operations. The PSO is required to adhere to those requirements as well as any PSO provider or agency requirements. The Observer Standards should note, and any PSO training program should advise, that industry standards often exceed those of the federal agencies. Most oil and gas companies and geophysical companies require contractors to provide evidence of safety programs and requirements that meet those defined through company management systems. This should be acknowledged in any discussion of health and safety, and the agencies should also clarify whether the program intends to include medical and helicopter underwater egress training (HUET) typically required of PSOs by the industry.

The Observer Standards recommend that as part of "health and safety training," a vessel owner should "allow a PSO to briefly walk through the vessel to ensure no hazardous conditions exist

according to a safety checklist, and to visually examine any safety item, upon request.” PSOs are not, however, safety professionals qualified to conduct safety walkthroughs or inspections on every vessel to which they are assigned. The agencies should provide additional information on what information will be included on the safety checklist to clarify what the PSO would be looking for during this initial walkthrough to prevent misunderstandings and unnecessary effort.

The Associations suggest that a standardized training program for PSOs should include a course in effective communications. It is vital that PSOs establish direct communications with the instrument room on a seismic vessel to prevent problems and delays in the event of sightings that trigger shutdown requirements and to ensure the visual observation timeframes are adhered to before ramp up and after shutdown. All parties must work effectively together to ensure compliance: PSO, Seismic Technicians, Vessel Captain, and crew.

In addition, as the use of Passive Acoustic Monitoring (“PAM”) to identify marine mammals increases in geophysical operations, the PSO Program should also include a course specific to PAM operations. PAM is a highly specialized skill and it is not appropriate to expect PSOs to possess those skills. If PAM is included in the program, training should also include rigging, mobilization and demobilization of equipment.

Finally, while the Observer Standards provide opportunity for PSO candidates who do not successfully pass an approved training course to reapply, there should be a limit on the number of times a potential PSO candidate can reapply for training.

Recommendations for BOEM/BSEE

The Observer Standards provide a list of recommendations for BOEM and BSEE to satisfy the objectives of the national standards. The Associations respectfully request that as BOEM and BSEE act on these recommendations, they solicit input from industry stakeholders and consider the following comments.

The Observer Standards recommend that BOEM and BSEE “develop permits or agreements detailing expectations and data collection and reporting of third-party PSO provider companies, including performance standards, conflicts of interest, and standards of conduct.” The Associations respectfully request the agencies provide additional information and opportunity for stakeholder input regarding any proposed permitting program for PSO provider companies, including the requirements, process times, reporting requirements, and any penalties for alleged permit violations. Without well-defined boundaries, an open-ended PSO provider permitting program will provide little utility.

In addition, the Observer Standards recommend that BOEM and BSEE “develop a mechanism, procedure, or regulation to ensure that selected PSO providers are being compensated prior to deployment of approved observers.” The Observer Standards do not, however, provide sufficient explanation of the need for PSO provider compensation prior to deployment of observers. More information would need to be provided to support the development of any requirement for prior compensation.

Development of Permit Fees

The Observer Standards recommend that BOEM and BSEE “consider assessing permit fees to financially support the PSO program needed for industry activities.” It is unclear how the agencies would determine the amount of the fees or how the fees would be assessed. The Associations recommend that all monies generated from any such permit fees be developed solely for, and directly benefit, the PSO program and not be used for any other, non-related federal activities. Because other industries conduct similar activities requiring PSOs, the agencies should also ensure that any permitting fees are equitable to supporting the PSO program.

Recommended PSO Eligibility Requirements

In addition to a national PSO training course and PSO eligibility standards, the Observer Standards recommend the development of a policy for national PSO qualifications and eligibility. The difference between these two objectives is not immediately apparent. Qualifications, including education and competency, should be satisfied with completion of the training program. An additional policy on qualifications and eligibility is unnecessary and the Associations are concerned that limiting qualified PSO candidates to those who possess a science degree would result in a shortage of personnel.

In the recommended PSO training and provider services model, *NMFS-Approved Private Sector PSO Trainers and PSO Providers*, the Observer Standards explain that “PSO providers and PSO eligibility requirements would be defined by NMFS.” While the Associations agree that the recommended mechanism for PSO training would provide more flexibility and less concern of the availability of PSO staff than the other mechanisms analyzed (*see p.10*), the agencies should clarify that NMFS’ definition of PSO providers would only entail identification of those providers that meet eligibility requirements.

In the recommended waiver of education and experience requirements for PSOs, PSO candidates can provide proof of previous work experience as a PSO overseas. Some additional detail or information should be required for eligibility based on overseas work as programs and processes in other countries can vary substantially from what is expected/required for US programs. The Observer Standards also provide that the approving federal agency official has the sole discretion to waive eligibility requirements on a case-by-case basis after reviewing a waiver request and written justification. The Associations are concerned that the agency can waive “some or all of the education/experience requirements on a case-by-case basis if a lack of qualified PSOs is demonstrated.” It would not be in the best interests of the regulators or the geophysical industry to employ PSOs who lack some critical or all necessary qualifications or experience. The Associations respectfully request that the waiver request, supporting justification and agency decision be made available to the PSO provider to ensure that a complete record of a PSO’s experience is on file should issues arise.

The Associations agree that PSO candidates should also be in good health and have no physical impairments that would prevent them from performing their assigned tasks. The agencies should

clarify, however, whether documentation or medical certification would be required similar to the *National Minimum Eligibility Standards for Marine Fisheries Observers*.

PSO Demand & Cost Estimates

The Observer Standards estimate that currently 30 PSOs are needed on a daily basis for G&G surveys in the Gulf of Mexico, with an average of 15 PSOs at sea on any given day. Based on 2009 data in the GOM, the total estimated annual costs are \$2,116,547. BOEM and BSEE indicate, however, that future demand for PSOs is likely to “significantly increase over the next 5 years, and many G&G surveys are expected to occur in federal water of the Atlantic EEZ.” Accordingly, the Observer Standards severely underestimate the costs and level of PSO demand. Assuming daily rates of \$700.00 for each PSO, a reasonable estimate of 30 PSOs would cost \$21,000 per day or \$3.8M for 6 months. Travel, reporting, and health insurance would likely entail additional costs. The Associations request that the agencies update the cost and level of demand estimates with more recent data.

In addition, the Observer Standards estimate the training for each PSO in the Gulf of Mexico to cost \$3,000.00. The agencies should provide a description of the various training costs detailed in this estimate, as described in Table 3, recognizing the uncertainties/unknowns associated with each estimate. For example, the estimated costs of safety training and medical examination appear lower than the industry standard.

PSO Evaluation During Permit/Authorization Approval

The Observer Standards specify that the recommended time to evaluate PSO coverage required for all G&G projects is during BOEM’s permit application review or when applications for incidental take authorizations are submitted to NMFS. When weighing factors to determine the number of PSOs required for each survey, in addition to vessel size, the agencies should consider the number of bunks available on board the survey vessel.

Once the number of required PSOs is determined, the agencies assert that a single entity responsible for scheduling and deploying PSOs would result in “a greater level of consistency in many aspects of the PSO program...including maintaining an appropriate number of PSOs to meet scheduling and deployment needs.” The Associations are concerned, however, that the selection of a single entity, whether a third-party provider or federal agency, to meet PSO scheduling demand would be inefficient and would result in a strain on the ability to timely contract with and obtain the number of PSOs required for each geophysical survey.

In addition, the Associations are concerned that requiring a senior-level (or lead) PSO who has specific experience observing protected species in the proposed survey geographic area will drastically limit the number of available senior-level PSOs, potentially resulting in unnecessary project delays.

During monitoring, the Observer Standards recommend that in order to reduce bias, observation periods should be limited to “favorable viewing conditions.” It is unclear what is meant by unfavorable viewing conditions. During periods of “low visibility” PAM is currently required in

water depths greater than 100 meters (328 feet) in the Gulf of Mexico. The agencies should be careful not to define unfavorable conditions as anything different than low visibility or nighttime to ensure there is no gap in monitoring coverage.

Conflicts of Interest

Throughout the Observer Standards, the agencies reference “inherent conflicts of interests” between PSO providers and industry, allegedly influencing accurate reporting of data. There are several unsupported assertions of inappropriate influence and pressure by industry. These assertions are unsubstantiated, and in the absence of supporting statements or examples provided by the agencies, should be deleted. If a statement denying conflict of interest is required from the PSOs prior to deployment as recommended, the statement should also include language to the effect that the PSO will conduct all their activities and report all data in full compliance with all applicable laws and regulations.

The Observer Standards defines “a direct financial interest” as payment or compensation received directly from the owner of the seismic survey’s vessel, the G&G surveying company, or associated shore-based facility. The definition should also include any entity or leaseholder who employs or contracts with the survey company.

Standardized Data Collection

The Associations agree with and reaffirm the recommendation of the agencies to implement “standardization including data collection methods, standardized electronic forms, and software used in collaboration with NMFS and non-federal stakeholders.” Collaboration with NMFS should result in a form that produces data the agency can use and rely on to assess population numbers, stock assessments, and effects on marine species. The Associations note that Industry best practices already recommend the use of a standard reporting form, *the Marine Mammal Recording Form*, developed under a project funded by the Exploration and Production (E&P) Sound and Marine Life Joint Industry Programme.¹ The Associations would be interesting in working with the agencies to update current reporting forms to enable the reporting of substantive data from observations that could substantiate the implementation of appropriate mitigation measures.

Creation of PSO Database

The Associations support the creation and maintenance of a database to manage PSO data for geological and geophysical surveys. This information is already supplied to NMFS and BSEE, but it would be useful for interested stakeholders to have full and timely access to such a database as a means to assess PSO activities and monitor their effectiveness.

¹ See Barton, Carolyn J.S., Jaques, Robert, and Mason, Mike. 2008. Identification of Potential Utility of Collation of Existing Marine Mammal Observer Data. RSK Environmental Ltd., Cheshire, UK. The Marine Mammal Recording Form can be accessed at: <http://www.iagc.org/files/3193/>.

Conclusion

We appreciate the effort that the agencies have devoted to the development of PSO and data management programs for geological and geophysical surveys. We support this effort generally but, as detailed above, we have a number of concerns about the implementation of the recommendations. We respectfully request that the agencies engage with stakeholders prior to taking action on many of the recommendations, including the development of a PSO provider permit program, and system for permitting fees. We also encourage the agencies to pursue a program that encourages technology and remote monitoring, reducing health and safety risks. In addition, any program established should provide opportunity for feedback not only from PSOs, but also industry stakeholders. The Associations look forward to working with the agencies towards implementation of a PSO Program for geophysical surveys that is consistent with the best available science and technology, clearly written, transparently implemented, and fully informed by interested stakeholders.

Should you have any questions, please contact the undersigned at 202.682.8584, or via e-mail at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



Andy Radford
American Petroleum Institute



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cc: Deborah Epperson, BSEE Environmental Enforcement Division
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Jill Lewandowski, BOEM Environmental Assessment Division
Kimberly Skrupky, BOEM Environmental Assessment Division
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Teresa Turk, NMFS Office of Science and Technology

ATTACHMENT E



March 13, 2014

VIA Federal eRulemaking Portal

Chief, Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

Re: Comments on Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammals - **NOAA-NMFS-2013-0177**

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute (“API”), the International Association of Geophysical Contractors (“IAGC”), the National Ocean Industries Association (“NOIA”), and the Alaska Oil and Gas Association (“AOGA”) (collectively, the “Associations”) in response to the National Marine Fisheries Service’s (“NMFS”) Notice and Request for Comments on its Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammals (“Draft Guidance”). *See* 78 Fed. Reg. 78,822 (Dec. 27, 2013). We appreciate NMFS’s consideration of the comments set forth below.

I. INTRODUCTION

A. The Associations

API is a national trade association representing over 500 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers. API is a longstanding supporter of the Marine Mammal Protection Act’s (“MMPA”) regulatory process as an effective means of balancing and rationalizing responsible oil and gas activities with the conservation of marine mammals.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful

exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

NOIA is the only national trade association representing all segments of the offshore industry with an interest in the exploration and production of both traditional and renewable energy resources on the U.S. Outer Continental Shelf (“OCS”). The NOIA membership comprises more than 275 companies engaged in a variety of business activities, including production, drilling, engineering, marine and air transport, offshore construction, equipment manufacture and supply, telecommunications, finance and insurance, and renewable energy.

AOGA is a non-profit trade association located in Anchorage, Alaska. AOGA’s 15 member companies account for the majority of oil and gas exploration, development, production, transportation, refining, and marketing activities in Alaska. AOGA’s members are the principal oil and gas industry stakeholders that operate within the range of marine mammals in Alaskan waters and in the adjacent waters of the OCS. AOGA and its members are longstanding supporters of wildlife conservation, management, and research in the Arctic, and also support the continued issuance of incidental take authorizations in the Arctic. AOGA has for many years successfully petitioned for, and defended in court, incidental take regulations applicable to offshore oil and gas activities.

B. General Comments

The Associations want to acknowledge the significant effort involved in examining the scientific literature available on the topic of marine sound and its potential impacts on marine mammals. We recognize that this topic is complex and informed by an evolving base of scientific knowledge, and we appreciate the challenges associated with translating the available information into clear criteria. In this light, we support the goal of updating and developing acoustic criteria that are informed by, and consistent with, the best available science. We also support a continued effort in furtherance of this goal that is transparent and does not result in unnecessary or unsupported new processes for the regulated community. We have carefully reviewed and analyzed the Draft Guidance and have a number of specific comments, as detailed in the following sections of this letter, in which we identify opportunities for improvement, request clarity on technical issues, and address legal concerns. Our general comments are summarized as follows.

1. In certain respects, the Draft Guidance either does not consider all of the best available science or presents other scientific, technical, implementation, or operational concerns. These concerns are addressed in detail in Sections III.A and III.B below and in the Appendix that accompanies this letter. Given the scope of our comments, and the need for more information and analyses to facilitate a sufficiently informed process, we request that NMFS issue a second version of the Draft Guidance jointly with a draft implementation guide for public review and comment.

2. The Draft Guidance does not provide a full explanation of the anticipated impact of the proposed acoustic criteria on the regulated community, and there is no clear discussion of the regulatory implications of the proposed changes. Because the Guidance will be applied in a range of regulatory actions, we recommend that NMFS undertake a study comparing the assessment approach described in the Draft Guidance with the current assessment methods to demonstrate the regulatory implications of the proposed criteria. The results of this study should be presented in the second version of the Draft Guidance that is made available for public review and comment. Although the Draft Guidance's proposed metrics are not directly comparable to current assessment methods, we believe the results of such a study would be very informative to the regulated community.

3. The Draft Guidance presents uncertainty and potential complications regarding the implementation of the proposed criteria. The complexity of the methods proposed in the Draft Guidance will result in increased time and expenses for applicants, and may lead to confusion in both the regulated community and the general public. In addition, the Draft Guidance does not address a significant category of Level B take (i.e., behavioral modification). We request that NMFS provide a more detailed description of how the proposed acoustic criteria will be implemented generally (e.g., how and when it will be formally adopted and applied in the incidental take authorization process) and specifically (e.g., how it will translate into operational mitigation and monitoring measures for project applicants).

4. We commend NMFS for its commitment to undertake review and revision of this guidance every three to five years to incorporate knowledge as it is acquired. We also welcome the opportunity for applicants to propose alternative approaches to those presented in the Draft Guidance. This flexibility will enable innovation within the bounds of regulatory compliance. There are many ways to estimate potential exposures of marine mammals to various sound levels, and future applicants should not be limited to estimating exposures using the criteria set forth in the Draft Guidance if there are other methods that are more appropriate and scientifically justified. The Draft Guidance should emphasize the agency's discretion to assess and approve approaches that differ from those described in the Draft Guidance.

5. In the Draft Guidance, NMFS has developed criteria based on extrapolations from limited data sets. We do not believe that the methods used in parts of the Draft Guidance to obtain conservative criteria are always reflective of, or consistent with, the best available science. Accordingly, we recommend that the next version of the Draft Guidance address and explain the potential shortcomings associated with extrapolation from limited data and, where appropriate (as identified in the comments below), utilize other data that, although also limited, may more accurately reflect the best available science.

6. Marine mammal incidental take authorizations for the oil and gas industry have, for many years, been authorized by NMFS and the U.S. Fish and Wildlife Service ("FWS"). The best available science demonstrates that these authorizations have resulted in no detectable adverse impacts to marine mammal populations. Although we support NMFS's development of

new criteria that are consistent with the best available science, these new criteria should not be applied in a manner that results in increased regulatory burdens. The Associations are concerned that the Draft Guidance will unnecessarily result in an increased burden to the applicant during the permitting process. In addition, if the new criteria results in an increased number of shutdowns, or longer survey duration, not only will there be increased costs, but the safety risks for the activity will also increase.

II. STATUTORY CONTEXT

The Draft Guidance is primarily relevant to federal authorizations made pursuant to the Outer Continental Shelf Lands Act (“OCSLA”), the MMPA, and the Endangered Species Act (“ESA”). To add context for our comments, this section provides a short summary of the key provisions and requirements of the OCSLA, MMPA, and ESA.

A. OCSLA

The OCS is a significant source of oil and gas for the nation’s energy supply. In 2012, offshore areas of the United States supplied over 12 percent of the country’s natural gas and oil production, and are estimated to contain roughly 23 percent of the oil and 12 percent of the natural gas resources in remaining undiscovered fields in the United States. The important role of oil and gas exploration and development in the OCS is clearly reflected in OCSLA and its implementing regulations. Under those authorities, implementing agencies are mandated to preserve, protect, and develop oil and natural gas resources in the OCS in a manner that is consistent with the need to (i) make such resources available to meet the Nation’s energy requirements as rapidly as possible, and (ii) balance orderly energy development with protection of human, marine, and coastal environments. *See* 43 U.S.C. §§ 1332(3)-(5), 1346, 1348; 30 C.F.R. §§ 250.101, 250.107.

Geophysical surveys using seismic reflection are an essential, state-of-the-art component of oil and gas exploration in the OCS. Geophysical data are used by both industry and federal agencies to make informed economic and regulatory decisions regarding potential accumulations of oil and natural gas. As one of the earliest components of the lengthy process leading from leasing of lands, to exploration, to development and production of hydrocarbon resources, seismic surveys are critical to the OCS resource development mandated by Congress in OCSLA and have been demonstrated to have no detectable long-term impacts on the marine environment.

B. MMPA and ESA

Section 101(a)(5)(A) of the MMPA empowers NMFS (and FWS) to authorize the incidental take of marine mammals, subject to certain requirements. These authorizations occur in two forms: (i) incidental harassment authorizations (“IHAs”), which are issued for a period of no more than one year; and (ii) incidental take regulations (“ITRs”), which are effective for a period of up to five years and pursuant to which incidental take from a single activity is

authorized with a letter of authorization (“LOA”). 50 C.F.R. §§ 216.105, 216.106. When issuing ITRs and IHAs, NMFS must find, among other things, that the authorization will (i) have a negligible impact on marine mammal stocks; (ii) not have an unmitigable adverse impact on subsistence needs for marine animals; and (iii) minimize effects through implementation of appropriate mitigation. *See* 16 U.S.C. § 1371(a)(5)(D).

In addition, federal “agency actions” that are likely to adversely affect an ESA-listed species or its critical habitat are subject to consultation under Section 7 of the ESA, in which the consulting agency (NMFS or FWS) issues a biological opinion as to whether the action is likely to jeopardize the continued existence of the listed species or to destroy or adversely modify its critical habitat. 16 U.S.C. § 1536(a)(2). Section 7 consultation may result in the issuance of an incidental take statement (“ITS”) that includes “reasonable and prudent measures” to minimize the effects of the proposed action. *Id.* § 1536(b)(3)(A), (b)(4)(C). For MMPA incidental take authorizations that involve ESA-listed species, NMFS (or FWS) typically issues a biological opinion containing an ITS and reasonable and prudent measures applicable to the activity that may cause incidental take.

Congress has mandated that decisions made under both the MMPA and the ESA must be based on the best scientific information available. *Id.* §§ 1373(a), 1536(a)(2). The U.S. Supreme Court has explained that Congress intended this requirement to both (i) serve the goal of species preservation and (ii) prevent unnecessary economic impacts caused by the precautionary application of incomplete or speculative information. *See Bennett v. Spear*, 520 U.S. 154, 176-77 (1997).¹

III. DETAILED COMMENTS

A. NMFS Should Provide More Clarity and Explanation Regarding the Implementation of the Proposed Criteria

¹ The National Marine Sanctuaries Act (“NMSA”) requires federal agencies whose actions are likely to destroy, cause the loss of, or injure a sanctuary resource to consult with the Office of National Marine Sanctuaries (“ONMS”) before taking any action. *See* 16 U.S.C. § 1434(d)(1). The term “injure” is defined as to “change adversely, either in the short or long term, a chemical, biological or physical attribute of, or the viability of.” 15 C.F.R. § 922.3. Through the sanctuary consultation process, ONMS may recommend reasonable and prudent alternatives to protect sanctuary resources, as well as monitoring. *See* 16 U.S.C. § 1434(d)(2). The Draft Guidance does not address whether NMFS will apply the acoustic criteria any differently in the NMSA context (compared to the MMPA and ESA contexts). If NMFS plans to apply the acoustic criteria differently in the NMSA context, it should provide an explanation for the public’s consideration and comment.

The Draft Guidance should provide an explanation of the anticipated impact of the proposed acoustic criteria on the regulated community and a clear discussion of the regulatory implications of the proposed changes. In addition, to eliminate uncertainty and potential future complications, it would be helpful if the Draft Guidance contained a specific analysis of how the implementation of the proposed criteria will affect existing offshore activities, monitoring protocols, estimated incidental take assessment, and the development of mitigation measures.² These explanations and clarifications would increase transparency, allow for more informed public review and comment, and help to “ensur[e] and maximiz[e] the quality, objectivity, utility, and integrity” of the information provided in the Draft Guidance, as required by the Information Quality Act. *See* Pub. Law No. 106-554, § 515 (2000); *see also* 67 Fed. Reg. at 8,456 (“The more important benefit of transparency is that the public will be able to assess how much an agency’s analytic result hinges on the specific analytic choices made by the agency. Concreteness about analytic choices allows, for example, the implications of alternative technical choices to be readily assessed.”).³

We offer the following suggestions and examples to identify specific improvements that could be made to the Draft Guidance and topics for which additional explanation would be helpful.

1. We recommend that NMFS undertake a study comparing the assessment approach described in the Draft Guidance with the current assessment approach using case studies of various sources, both impulsive and non-impulsive, in different OCS regions, to demonstrate the regulatory and technical implications of the proposed criteria. Although the proposed criteria are not directly comparable to the criteria currently used, we believe the results of such a study

² *See* 67 Fed. Reg. 8,452, 8,459 (Feb. 22, 2012) (“In assessing the usefulness of information that the agency disseminates to the public, the agency needs to consider the uses of the information not only from the perspective of the agency but also from the perspective of the public.”). We also recommend that the Draft Guidance include a summary of the additional costs that are expected to result from implementation of the new criteria, with a comparison of the expected benefits.

³ NMFS considers the Draft Guidance to be a “highly influential scientific assessment” subject to the *National Oceanic and Atmospheric Administration Information Quality Guidelines* (“NOAA IQG”). “[I]nfluential scientific, financial, or statistical information” is specifically held to higher information quality standards. *See* 67 Fed. Reg. at 8,452, 8,455 (“OMB guidelines apply stricter quality standards to the dissemination of information that is considered ‘influential.’”). These standards further counsel in favor of more information addressing the implications and implementation of the proposed criteria. *See generally* NOAA IQG at 1-2.

would be very informative to the regulated community and would facilitate the development of additional public comments that would be helpful to NMFS as it revises and refines the Draft Guidance.

2. NMFS can improve the usefulness of the Draft Guidance and enhance the regulated community's ability to meaningfully comment by providing for public review a draft of the "user guide" that will inform and assist NMFS's implementation of new acoustic criteria. The draft of this implementation guide should be provided for review and comment along with the second version of the Draft Guidance.

3. The Associations support NMFS's determination that the proposed SEL_{cum} metric will be applied to discrete activities/sources and not used to accumulate sound exposure for multiple activities occurring over the same time period. The Draft Guidance also states that application of the proposed criteria "do[es] not represent the entirety of the impact assessment" and explains that other qualitative factors will be considered. However, the Draft Guidance provides little discussion or explanation of how these qualitative factors will be considered, the relative weight given to the factors, or how the factors will be implemented. We encourage the agency's consideration of qualitative factors in a manner that adds flexibility to the regulatory process. In addition to providing more discussion of these qualitative factors, it would be helpful for the Draft Guidance to include an explanation of the important role served by currently implemented mitigation and monitoring measures, which have been proven to substantially avoid and reduce incidental take.

4. The Draft Guidance does not address a significant category of Level B take (i.e., behavioral harassment). The vast majority of offshore oil and gas incidental take authorizations involve Level B take in the form of behavioral modification. It would greatly improve the regulated community's ability to meaningfully assess the implications of the proposed criteria if the Draft Guidance included an explanation of how the proposed acoustic criteria will be implemented in the absence of new criteria applicable to Level B behavioral harassment. Again, this will be an area for which flexibility is important.

5. It is not clear from the Draft Guidance whether NMFS intends there to be five different mitigation zones for five different functional hearing groups or whether NMFS will prescribe the most precautionary mitigation zone based on the most sensitive species but applicable to all marine mammals in the area. Both of these potential options present concerns. On the one hand, the application of multiple radii for different species will be operationally challenging to implement. If NMFS is considering the implementation of varying exclusion zones, then this approach may also require changes to the standards applicable to observer programs and additional training of protected species observers. As further addressed in the Appendix (¶ 6.1.3), it is also not clear how NMFS will address effects at multiple depths under this approach. On the other hand, prescription of a single mitigation zone based on the most sensitive species but applicable to all marine mammals in the area would not be consistent with the best available science. It would be helpful for NMFS to provide a clear description of how it

foresees the proposed criteria translating into specific operational mitigation and monitoring requirements.

6. The Draft Guidance appropriately recognizes that TTS is not an “injury,” but addresses TTS as a form of Level B harassment separate from behavioral modification. The Draft Guidance states that TTS “will be addressed for purposes of take quantification” after NMFS develops guidance for behavioral modification and that, in the meantime, “the TTS thresholds presented represent the best available science and will be used in the comprehensive effects analyses under the MMPA and the ESA and may inform the development of mitigation and monitoring.” However, it is not clear from the Draft Guidance as to how NMFS will specifically address TTS in the permitting process before behavioral modification criteria are finalized. For example, it is unclear as to whether NMFS is now going to require the use of three separate take thresholds (for PTS, TTS, and behavioral modification) and, if so, how NMFS will ensure that the permitting and implementation processes do not become too burdensome and complex. The Draft Guidance should more fully explain how these issues will be addressed.

7. It is not clear from the Draft Guidance whether or where NMFS will require sound source verification (“SSV”). In the experience of the Associations’ members, SSV poses a complicated and unnecessary burden on operations because the results of SSV are highly variable due to constantly changing conditions in the water column. If SSV is intended to be part of the standard protocol in the implementation of the proposed criteria, then it is important that the regulated community have the opportunity to provide informed input on this potential requirement. Specific recommendations regarding SSV are provided in the Appendix (§ 6.1.2).

8. The Draft Guidance addresses a complex subject, and this is reflected in an equally complex proposed approach with several options provided to applicants. The complexity of the proposed approach will result in increased time and expenses for applicants, as well as potentially strain the limited resources of specialized modeling firms. Additionally, the complexity of the Draft Guidance could create confusion among public stakeholders, possibly leading to mistaken interpretations or public statements regarding the purpose and intent of the Draft Guidance. More clarity on the purpose of the Draft Guidance, and how it will be implemented, would enhance both the regulatory and public perception aspects of the Draft Guidance.

9. In determining PTS and TTS onset levels, NMFS adopts two methodologies for determining quantitative factors that can be considered in conjunction with utilizing the numeric acoustic threshold levels: a marine mammal weighting function and an alternative acoustic threshold level. In so doing, NMFS recognizes that the applied weighting function will likely result in a lower estimate of take, but that the new methodology “might extend beyond the capabilities of some applicants” (i.e., smaller operators). This system could have inequitable results for operators who, for either cost or time reasons, may not be able to use the more complicated applied weighted factor methodology. It would be helpful for the Draft Guidance to

include more explanation to inform applicants about the potential costs, benefits, and consequences of each of these two methodologies.

10. In addition, if the incidental take estimate in a five-year ITR is based on non-weighted PTS and TTS thresholds, then the estimate will be unrealistically high. Alternatively, if an ITR is based on a weighted approach using contemporary modeling, LOA applicants who use the unweighted approach may complicate the agency's ability to reasonably manage and implement the ITR. We recommend that NMFS explain how it plans to implement future ITR/LOA processes, or multiple IHAs, in a context in which two approaches to estimating potential takes are stated in the agency's guidance.

We provide the above suggestions and examples to highlight the need for more information regarding the implementation of the proposed criteria and to identify specific opportunities for improvement. We respectfully request that NMFS revise and reissue the Draft Guidance, and a draft implementation guide, in a manner that comprehensively addresses the concerns described above and below.⁴

B. The Draft Guidance Presents a Number of Scientific and Technical Concerns That Must Be Addressed Before NMFS Issues Final Guidance

In general, the Associations support the development of new acoustic criteria based upon the best scientific information available, such as the findings and principles stated in Southall et al. (2007) and Finneran and Jenkins (2012). However, we have several scientific, technical, and operational concerns about the Draft Guidance. The following comments address these concerns.

1. TTS Thresholds

The Draft Guidance concludes that TTS is not an "injury" for MMPA purposes and should, at most, be considered Level B harassment. The Associations concur with this finding. The best available science indicates that hearing for marine mammals that have experienced TTS returns to normal within hours or days and that post-exposure behavior returns to normal. *See, e.g.,* Mooney et al. (2009a, 2009b); Popov et al. (2011); Finneran and Schlundt (2013). Moreover, behavioral studies indicate that marine mammals tend to move away from a sound

⁴ It is not clear whether NMFS reviewed the Draft Guidance pursuant to the National Environmental Policy Act ("NEPA") or, alternatively, determined that NEPA does not apply. The second version of the Draft Guidance should clarify NMFS's determination regarding the applicability of NEPA and provide NEPA review documentation, if any, for public review.

source if it is disruptive, which significantly diminishes the potential for any TTS-related effects. *See* Nowacek et al. (2007). The data collected in experiments in which animals are exposed to sounds in a controlled setting likely result in overestimates of exposure because the subjects are exposed to much longer and louder sounds than they would be in the natural environment.

In addition, the Draft Guidance does not incorporate significant recent research regarding the auditory effects on bottlenose dolphins from multiple impulses of a seismic source (Finneran et al. (2011); Finneran et al. (2012); Schlundt et al. (2013)). These studies exposed three different bottlenose dolphins to multiple (10) impulses of a seismic airgun, SEL_{cum} 195 dB re 1 μPa^2 -s, without any measurable TTS. The Draft Guidance proposes a TTS onset for impulsive sounds for mid-frequency cetaceans at SEL_{cum} 172 dB re 1 μPa^2 -s. This is an extraordinarily low and unrealistic threshold given that the Finneran research could not induce TTS at 195 dB re 1 μPa^2 -s. The draft TTS onset criteria should be revisited to consider Finneran and Schlundt's recent and more directly applicable work. As stated in Finneran et al. (2012), "[t]hese data suggest that the potential for seismic surveys using air guns to cause auditory effects on dolphins and similar delphinids may be lower than previously predicted."

Finally, the Draft Guidance describes criteria applicable to animals likely to experience TTS during marine operations that produce underwater sounds.⁵ In most cases, the authors of the available relevant studies have not used the highest levels required to induce TTS, and NMFS has excluded studies in which TTS was not induced by sound levels equivalent to those in the proposed criteria. *See* SEAMARCO (2011); Kastelein et al. (2013). As a result, animals exposed at levels associated with TTS as currently proposed will not necessarily experience TTS and, therefore, the methods described in the Draft Guidance can only be used to estimate the number of animals that could potentially experience TTS.⁶ Accordingly, the highest exposure that did not induce TTS in recent studies must be included in the data set used to develop the TTS thresholds, as referenced above. The Draft Guidance should also identify and describe each

⁵ The data for establishing TTS for representative species come from a small number of animals. The lack of available data underlying the proposed acoustic criteria is not clearly addressed or explained by NMFS. Although NMFS is required to consider the best available science, it also has an obligation to explain the limitations of the information being used as a basis to develop important agency policy and guidance.

⁶ The Draft Guidance references recent studies by Kujawa and Liberman (2009) and Lin et al. (2011) that indicate that even if a full recovery is observed after TTS in small mammals, some neurological damage was permanent. However, these results cannot be extrapolated to other species because the data are very limited and the implications for actual negative effects on the animal's ecology, behavior, or fitness have yet to be measured. Additionally, these two studies investigated extreme TTS, and, therefore, it is not known whether similar effects would occur in marine mammals at lower TTS levels.

instance in which conservative thresholds are selected (i.e., selecting the lowest TTS threshold in a small sample size), and TTS onset in these instances should be described as potential, not actual. This distinction is important because the Draft Guidance defines TTS, not “potential TTS,” as Level B harassment, and how Level B harassment is estimated has important relevance to the “small numbers” and “negligible impact” determinations that must be made in support of MMPA incidental take authorizations.

2. Functional Hearing Groups, Weighting Functions, and Threshold Criteria

In general, knowledge of basic hearing is still limited for most species of marine mammals. Finneran and Jenkins (2012) provided the most updated list of species whose hearing has been scientifically measured. Although some groupings of marine mammals that hear similarly may be appropriate, the extrapolated hearing ranges presented in the Draft Guidance are not consistent with the best available science (Southall et al. (2007) and Finneran and Jenkins (2012)) in a number of respects.

First, the extension of the hearing range of low-frequency cetaceans is not supported by empirical evidence. There is no evidence indicating that mysticetes hear above 20-22 kHz, and there are no empirical data to support the Draft Guidance’s expansion to 30 kHz. The data presented in the Draft Guidance do not provide additional scientific information to justify expanding the hearing of low-frequency cetaceans to 30 kHz.

Southall et al. (2007) indicated that vocalizations are unlikely to always predict hearing ranges. Animals tend to hear best around the frequencies they use for communication and echolocation (Ketten 2002), but can also extend below and above the range of frequencies they use. There is empirical evidence that animals can produce sounds that they cannot necessarily hear and, therefore, Au et al. (2006) should not be used in determining the hearing range of low-frequency cetaceans. For instance, Nachtigall et al. (2007) showed that white beaked dolphins do not hear past 181 kHz, even though they are often recorded producing sounds up to 305 kHz (Mitson 1990) and clicks have secondary peak at 250 kHz (Rasmussen et al. 2002). Therefore, harmonics above 20 kHz do not necessarily imply hearing in mysticetes. The Draft Guidance cites Tubelli et al. (2012) and Ketten and Mountain (2009), which are predictions based on anatomical modeling and are yet to be validated by empirical data.⁷

Moreover, the frequency weighting functions in Figure 2 of the Draft Guidance are based on no empirical data and imply that low-frequency cetaceans are much more sensitive to acoustic exposure than was formerly believed or than what the current research supports. There is also no clear explanation or support for the low-frequency cetacean auditory weighting function

⁷ Tubelli and Stein (2007) reported only potential response to 22 kHz signals.

parameters presented in Table 3. The low-frequency criteria should be based on Southall et al. (2007) and Finneran and Jenkins (2012).

Second, the hearing ranges of otariids and phocids, as proposed in the Draft Guidance, are different than the hearing ranges stated in Finneran and Jenkins (2012) (respectively, 75 Hz to 75 kHz and 100 Hz to 50 kHz). Southall et al. (2007) defined the hearing range limits as being approximately 80 dB above the lowest thresholds. However, in Kastelein et al. (2009), thresholds for phocids are more than 80 dB above the most sensitive thresholds and should not be considered to be within the functional hearing range. Likewise, Hemilä et al. (2006)'s data were based on anatomical studies, not empirical hearing data and should not substitute for actual hearing measurement data. Accordingly, for establishing reliable hearing ranges for otariids and phocids, the Draft Guidance should use the thresholds reported in Finneran and Jenkins (2012) and in Reichmuth et al. (2013). Recent work by Sills et al. (2014) provides additional support that the 70-80 kHz range encompasses the high frequency cut-off for phocids with a threshold of 101 and 102 dB at 72.4 kHz. For otariids, Finneran and Jenkins (2012) reviewed all of the best available data and recommended an underwater hearing range of 100 Hz to 50 kHz (100 Hz to 35 kHz in air). The Draft Guidance does not clearly explain why 40 kHz was selected as a high frequency cut-off for otariids instead of 50 kHz and there is no recent empirical study to support that proposed modification.

Third, the Associations are concerned with the proposed criteria for both impulsive and non-impulsive sound for high-frequency cetaceans. For impulsive sound, the proposed high-frequency cetacean thresholds are based on the underlying data from a single study involving a single animal (harbor porpoise) (Lucke et al. 2009) in which large variations in ambient noise may have caused confounding effects on the SEL_{cum} and SPL_{peak} threshold estimates.⁸ For non-impulsive sound, the extrapolation for high-frequency cetaceans is based on a single study involving only two animals (Popov et al. 2011), and the non-impulsive SPL_{peak} values are extrapolated from data on impulsive sounds rather than using the data available for non-impulsive sounds. Popov et al. (2011) recognized that their data might be biased due to multiple exposures in one day and the absence of data on the variability of baseline thresholds, which could add uncertainty and confounding factors to the TTS estimates. This highlights the need for flexibility in the implementation of the final acoustic criteria in future regulatory processes.

3. Addressing Limited Data

⁸ Finneran and Jenkins (2012) separated harbor porpoises from other high-frequency cetaceans for their behavioral thresholds because there is evidence showing that this species reacts to quieter sounds than most high-frequency cetaceans. Accordingly, using the harbor porpoise as a surrogate species for high-frequency cetaceans is unlikely to be representative.

Generally, the Draft Guidance notes that the proposed criteria are based upon research using very few marine mammals. To address limited data, the agency explains that it will choose the lowest threshold value if there are less than five relevant studies and that it will identify a median value if there are five or more studies. The Associations respectfully disagree with this approach and propose that NMFS consider the best available information, regardless of the number of available studies and, as required by the MMPA and the ESA, develop thresholds that most accurately reflect all of the available science rather than applying a conservative approach by choosing a low reported value to the exclusion of other available information.

4. Equal Energy Hypothesis

The use of SEL_{cum} is practical in the sense that it allows researchers and operators to compare sound events with various SPL and time durations. For transient sounds, SEL_{cum} is also practical as it expresses the total energy as opposed to the maximum energy. However, SEL_{cum} is used under the assumption that a low amplitude and long signal with an equal SEL_{cum} as a loud and short signal will have the same effects on the auditory system (the Equal Energy Hypothesis (“EEH”)). The EEH may be correct in certain conditions, but an increasing body of evidence indicates that the EEH does not hold true in most marine mammal sound exposures. As recognized in the Draft Guidance, the EEH is not supported by several studies. *See* Kastelein et al. (unpublished); Popov et al. (2011); Popov et al. (unpublished), Supin (Aug. 2013 Abstract); *see also* Mooney et al. (2009a); Finneran et al. (2010b); Kastak et al. (2005); Kastak et al. (2007); Mooney et al. (2009b); Finneran et al. (2010a); Kastelein et al. (2012a); Kastelein et al. (2012b). Therefore, the use of SEL_{cum} has some practical aspects, particularly in the absence of a complete data set. However, as more data become available, more analyses should be performed to determine what model or equation best fits the EEH, and how the SEL_{cum} criteria should be revised to more accurately reflect the potential for TTS changes with duration and amplitude.

5. Marine Mammals’ Ability to Adjust Hearing

There is a growing body of science regarding the ability of marine mammals to adjust their hearing when exposed to loud sounds. *See* Popov (Aug. 2013 Abstract); Nachtigall and Supin (2013). This research describes the ability of cetaceans to voluntarily reduce the level of incoming sound by up to 13 dB through the use of an active noise control system. However, these studies do not appear to have been considered in the Draft Guidance. Consistent with its obligation to use all of the best available science and the recognized need for flexibility, NMFS should address and consider these studies if presented by applicants during the permitting in process, and review and update the Guidance as necessary as this area of science becomes more fully developed.

6. Recovery

In general, SEL_{cum} is an appropriate way to measure transient sounds because it allows comparisons between sound exposures of different natures or durations. However, the proposed

threshold criteria assume no recovery between sound exposure events for intermittent and repeated exposures. Given the current knowledge of TTS, this assumption may be inaccurate. Existing studies indicate that recovery may occur in both terrestrial and marine mammals, and research suggests that marine mammals have other adaptive strategies that protect them from sound (Nachtigall and Supin 2013). We recommend that NMFS include a recovery function in the Draft Guidance, and incorporate the work of Finneran et al. (2010) and Finneran and Schlundt (2013). Although these studies are limited in scope, their validity is not in question.

7. Accumulation Periods

The selection of one-hour and 24-hour accumulation periods are not biologically based, and we suggest that NMFS revise the Draft Guidance to expressly allow for the option of SEL_{cum} modeling for the duration of the activity in addition to the one-hour and 24-hour options. We also request that NMFS provide additional information to footnote 15 on page 13 of the Draft Guidance. This footnote indicates that the SEL_{cum} metric is not meant to accumulate sound exposure for multiple activities or for naturally occurring sounds, but very little supporting explanation is provided.

8. Continuous and Impulsive Sounds

The Draft Guidance's definitions of continuous and impulsive sounds are vague and do not objectively distinguish these two types of sound. Impulsive sounds become increasingly continuous with distance, due to multipath arrivals and other factors, and may have continuous components even at short distances, due to reverberation. Accordingly, clear technical definitions of continuous (non-impulsive) and impulsive sounds from geophysical sources, based on the best available scientific literature, should be included in the Draft Guidance. *See* Southall et al. (2007). NMFS should also consider waveform data at the location of the receiver (i.e., the marine mammal) as one of the parameters to determine the impulsive nature of signals covered by these criteria.

9. Relevant Recent Research

A substantial amount of information recently presented at scientific conferences should be considered in the Draft Guidance. *See* Abstracts from The Effects of Noise on Aquatic Life

(Budapest, Aug. 2013);⁹ Popov et al. (unpublished). Among other things, this new information addresses (i) the effects of low-frequency sound as well as EQL for pinnipeds, and (ii) the validity of EEH. Moreover, Southall et al. (2007) will be updated to address the results of recent research, and the proceedings of the August 2013 International Conference on the Effects of Noise on Aquatic Life will soon be published. If this work is available when NMFS prepares a second version of the Draft Guidance or before final guidance is issued, it should be considered and incorporated.¹⁰

C. New Acoustic Criteria Should Not Result in More Regulatory Burdens for Offshore Industries

For many years, marine mammal incidental take authorizations for the oil and gas industry have been authorized by NMFS and FWS on a project-by-project basis (i.e., IHAs) or through the issuance of ITRs and related LOAs. The best available science and information demonstrates that these authorizations have resulted in no detectable adverse impacts to marine mammal populations. Although we support NMFS's development of new criteria that are consistent with the best available science, these new criteria should not be implemented in a manner that results in increased regulatory burdens because the best available information shows that offshore sound-producing operations, as currently regulated, have had no more than a negligible impact on marine mammal species and stocks. The Associations are concerned that the Draft Guidance will unnecessarily result in more difficulties with the permitting process, an increased number of shutdowns, longer survey duration, increased costs, and increased exposure to safety risks. We therefore ask that NMFS consider the record of offshore sound-producing activities in effectively minimizing and mitigating effects to marine mammals as it further refines the implementation processes for the proposed criteria.

IV. CONCLUSION

We appreciate the effort that NMFS has devoted to the development of new acoustic criteria. We support this effort generally but, as detailed above, we have a number of concerns about the implementation processes and the lack of substantive support for some of the proposed criteria. We respectfully ask NMFS to address these concerns and issue a revised version of the Draft Guidance, as well as a draft implementation guide, for public review and comment. The Associations will continue to support a process that is comprehensive, transparent, consistent with the best available science, and fully informed by the public.

⁹ More information and citations regarding the work presented at this conference are provided in the "References" section of this comment letter.

¹⁰ Sills et al. (2014) and Wensveen et al. (2014) are examples of emerging science that NMFS should consider in its development of acoustic criteria.

Should you have any questions, please contact the undersigned at 202.682.8584, or via e-mail at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



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Karen St. John
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Jeffrey Vorberger
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Appendix
NMFS Draft Acoustic Criteria Implementation Issues
Comments of API, IAGC, NOIA, and AOGA

1. Introduction

- 1.1. The draft acoustic criteria guidelines proposed by NMFS (the “Draft Guidance”) provide a significant change of approach and level of complexity in evaluating acoustic impacts on marine life. While much of the Draft Guidance primarily presents topics as research-related technical issues to inform the agency’s decisions regarding threshold levels, the document does highlight the importance and difficulty in operationalizing or implementing the proposed criteria in the context of applying for, issuing, and complying with incidental take authorizations pursuant to the MMPA, ESA and NMSA.
- 1.2. Overall, there is insufficient discussion in the Draft Guidance explaining how the proposed criteria would be implemented, how they will be measured by the regulated community in a meaningful way, how the permitting process may be affected, how monitoring requirements will change, or how common mitigation practices employed by the oil and gas industry for years and are proven to reduce sound impacts on marine mammals will be adequately considered.
- 1.3. The Draft Guidance provides little explanation of the anticipated impact of the new criteria on the offshore oil and gas industry. Unfortunately, the NMFS did not undertake – or did not present – information from any modeling exercises to show the practical effect of the proposed changes on either environmental protection or burden on industry. The Associations would encourage such an evaluation be conducted before the Criteria is finalized and/or an Implementation Guide is prepared.
- 1.4. Although we appreciate that comparison is made more difficult because the new criteria are based on different metrics, it is certainly possible for the agency to perform a rigorous analysis - perhaps using case studies or examples - of a “baseline” of how the agency now handles implementation versus how it will practically work in the future in the context of demonstrable risks to marine life from industry activities. Such a risk-based approach is encouraged.
- 1.5. Due to the lack of clarity around these practical issues, the Associations suggest that NMFS revisit these issues and (1) publish a revised Draft Acoustic Criteria document and (2) prepare a companion Acoustic Criteria Implementation Guide issued concurrently to bring greater certainty to both resource managers and the regulated community about the practical path forward. Both of these documents should be subject to public review and comment.
- 1.6. Industry is ready and willing to support and actively participate in discussions with agency officials and/or in workshops to facilitate greater input to development of the recommended Implementation Guide. Below, we offer preliminary input on a variety of implementation-related issues that should be addressed in this dialogue.

2. Balance Between Flexibility & Predictability

In general, the Associations believe that flexibility in assessing and mitigating effects is prudent given the diversity of marine mammal species' hearing ranges, the range of effects, and acoustic source characteristics. However, this flexibility should be balanced by the objective of greater clarity, predictability and consideration of effort, resource availability and expense borne by the agencies and industry. The Guidance, as noted, should provide a comparison of the previous approach and what is now recommended. The Associations are particularly interested in the agency's view of the impact the changes will have on permit applications and the agency's time requirements to process them.

3. Use of the Criteria in the Permitting Process

The Draft Guidance provides a brief reference to its use in the current 14-question IHA permit application. It is recommended that the Implementation Guide include a much fuller presentation of how this process will be applied. Below are a few associated issues such a guide should address.

3.1. How will the Draft Guidance be implemented in (i) the context of a five-year ITR (with specific take authorizations by LOA) and (ii) when numerous IHAs are issued for a given area in the absence of an ITR? Specifically, will the agency use different methods to estimate the amount of authorized incidental take in each of these contexts? In addition, how, if at all, will authorized take be allocated over certain periods of time in one or both of these contexts?

4. Clarification Regarding PTS/TTS

4.1. The Draft Guidance is confusing and should be further clarified regarding PTS/TTS. On page 20 NMFS says, ““NOAA equates the onset of PTS, which is an auditory injury, with “Level A Harassment” as defined in MMPA and with “harm” as defined in ESA...NOAA does not consider TTS to be an auditory injury and thus it does not qualify as Level A Harassment or harm. Nevertheless, TTS is an adverse effect that constitutes another kind of “take.”...NOAA currently is in the process of developing new thresholds for onset of behavioral effects. When that process is completed, TTS will be addressed for purposes of take quantification. In the meantime, the TTS thresholds presented here...will be used in comprehensive effects analysis...and may inform the development of mitigation and monitoring.”” This language is too vague and open-ended to inform meaningful comments.

4.2. While NMFS has limited the Draft Guidance to Level A takes, defined as auditory injury equated with PTS, the Draft Guidance makes extensive reference to TTS. Clarification is needed as to why TTS is included in the present document, which does not include behavior. The Guidance and Implementation Guide should be explicit if TTS serves another role in discussion of injury. If it does not, the potential role of TTS in behavior should be deferred to publication of draft criteria for Level B behavioral harassment.

5. Model Related Issues

- 5.1. The Draft Guidance identifies a diverse set of approaches in evaluating acoustic effects and provides a general point of view that models provide a more accurate assessment of acoustic effects. The Associations would note that without model validation/verification this assumption is untested and recommends that NMFS undertake this as part of the process of developing the final acoustic criteria.
- 5.2. The Draft Guidance suggests that a variety of model approaches and models could be employed. It is noted that the regulated community is responsible for selecting a methodology for implementing the acoustic criteria and presenting it to NMFS. While the Associations appreciate and encourage this flexibility, we also recommend that NMFS establish more specific model acceptance criteria.
- 5.3. Depending upon NMFS's decisions on the extent and depth of modeling requirements, it is likely that both the current range of modeling vendor choices and their capacity will be inadequate to fulfill the agency's requirements, which could lead to unwarranted permitting delays or costs. The Implementation Guide should address how this transition period, which will necessitate an expansion of the pool of adequate modeling expertise and vendors, will be effectively managed.

6. Data Input Requirements

- 6.1. Data input requirements should be more explicit. These requirements should be practicable and should consider the whether the demand for precision and survey-by-survey information will really yield a substantively more informed resource management decision considering the overall lack of information, natural variability, and environmental confounding factors.
- 6.2. Sound Source Verification: For the Gulf of Mexico, an area of high seismic survey activity, project specific sound source verification is impractical. The Associations recommend that NMFS model a typical source array in 9 GoM zones (3 (shallow, shelf and deep) in each of the 3 Planning Areas) by season using a number of sound velocity profiles available from publically available NOAA CTD data. NMFS should then conduct sensitivity analyses on these profiles to determine seasonal variability and create a range of transmission loss profiles for individual model outputs to satisfy. Then, empirical data could be collected on a select number of representative projects rather than all projects, to also verify that the empirical data falls within the modeled range.
- 6.3. Water Depth Differentials: Industry recommends continuation of the existing BOEM approach to evaluate acoustic effects within standardized categories of submerged lands depth and bottom conditions rather than individual project assessments. Such an approach would provide a level of accuracy/precision sufficient for informed monitoring/mitigation decision-making. In the Gulf of Mexico, this would consider shallow water, the slope and deep water within the Western, Central and Eastern planning areas. This approach could include bottom conditions such as hard bottoms or soft sediments, which substantively affect sound propagation.

7. Implementation of Observation/Exclusion Zones

- 7.1. The Draft Guidance provides thresholds for five hearing groups, but it is not clear how these thresholds will be applied when determining safety or exclusion zones. The Implementation Guide should address how this will be practically and flexibly carried out. The Guidance should include recent approaches that give discretion for decisions involving shutdowns for dolphins that are deemed to be in the ensonified area voluntarily.
- 7.2. It is possible that the size of model-established exclusion zones will be larger than that which can be effectively monitored. Where that is the case, the Associations recommend that NMFS employ a practical limit to an area that can be effectively be monitored as it has in LOAs issued to the U.S. Navy.

8. Exposure Duration

- 8.1. Provisions are made for use of either a 1-hour or a 24-hour accumulation period depending upon whether models that calculate animal and/or source movement and exposure are used.
- 8.2. Exposure is a function of both movement of the vessel and movement of animals. In addition, animal movement is both lateral and vertical. The Draft Guidance should clarify and confirm NMFS's consideration of these factors as well as consider the reduction in incidental takes that results from avoidance.
- 8.3. We suggest that NMFS revise the Draft Guidance to expressly allow for the option of SEL_{cum} modeling for the duration of the activity in addition to the 1-hour and 24-hour options and utilize the approach with the smallest estimated number of estimated potential marine mammal exposures.
- 8.4. Implementation of the acoustic accumulation period should provide a way to consider periods of reduced or no sound propagation for power-downs and line turns (which could allow for recovery) to be more accurate.
- 8.5. Clarification regarding NMFS's approach for use of the SEL_{cum} metric would be helpful. The agency indicates SEL_{cum} is not meant to accumulate sound exposure for multiple activities or for naturally occurring sounds; however, no alternative metric is provided for this type of assessment.

9. Consideration of Mitigation Factors

The Draft Guidance notes that a variety of factors, some of which are not explicitly considered in the quantification of incidental takes, are in fact relevant. The Associations agree. In particular, avoidance behavior and the effect of ramp-up, power down, and shutdown in reducing takes are significant. The Implementation Guide should review and consider improvements in how these impact avoidance factors are given equal consideration in the agency's effects analysis. It is very likely that these avoidance factors are especially meaningful in explaining the discrepancy between the numbers of model-predicted incidental takes and actual observations in the field.



September 14, 2015

VIA Federal eRulemaking Portal

Chief, Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226
Attn: Acoustic Guidance

Re: Comments on Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing—**NOAA-NMFS-2013-0177**

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute (“API”), the International Association of Geophysical Contractors (“IAGC”), and the Alaska Oil and Gas Association (“AOGA”) (collectively, the “Associations”) in response to the National Marine Fisheries Service’s (“NMFS”) Notice and Request for Comments on the second version of its Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (“Second Draft Guidance”). *See* 80 Fed. Reg. 45,642 (July 31, 2015). We appreciate NMFS’s consideration of the comments set forth below.

I. INTRODUCTION

A. The Associations

API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers.

IAGC is the international trade association representing geophysical services companies that support and provide critical data to the oil and natural gas industry. IAGC members (including companies engaged in geophysical data acquisition, processing, and interpretation; geophysical information ownership and licensing; and associated services and product providers)

play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

AOGA is a non-profit trade association located in Anchorage, Alaska. AOGA's 14 member companies account for the majority of oil and gas exploration, development, production, transportation, refining, and marketing activities in Alaska. AOGA's members are the principal oil and gas industry stakeholders that operate within the range of marine mammals in Alaskan waters and in the adjacent waters of the Outer Continental Shelf ("OCS"). AOGA and its members are longstanding supporters of wildlife conservation, management, and research in the Arctic. AOGA has for many years successfully petitioned for, and defended in court, incidental take regulations applicable to offshore oil and gas activities.

B. Responsible Offshore Development

The OCS is a significant source of oil and gas for the nation's energy supply. In 2014, offshore areas of the United States supplied over 9 percent of the country's natural gas and oil production, and are estimated to contain roughly 17 percent of the oil and 12 percent of the natural gas resources in remaining undiscovered fields in the United States. The important role of oil and gas exploration and development in the OCS is clearly reflected in the Outer Continental Shelf Lands Act ("OCSLA") and its implementing regulations. Under those authorities, implementing agencies are mandated to preserve, protect, and develop oil and natural gas resources in the OCS in a manner that is consistent with the need to (i) make such resources available to meet the nation's energy requirements as rapidly as possible, and (ii) balance orderly energy development with protection of human, marine, and coastal environments. *See* 43 U.S.C. §§ 1332(3)-(5), 1346, 1348; 30 C.F.R. §§ 250.101, 250.107.

Geophysical surveys using seismic reflection are an essential, state-of-the-art component of oil and gas exploration in the OCS. Geophysical data are used by both industry and federal agencies to make informed economic and regulatory decisions regarding potential accumulations of oil and natural gas. As one of the earliest components of the lengthy process leading from leasing of lands to exploration, development, and production of hydrocarbon resources, seismic surveys are critical to the OCS resource development mandated by Congress in OCSLA and have been demonstrated to have no detectable long-term impacts on the marine environment.

Geophysical surveys facilitate the safe and orderly development of OCS oil and gas reserves. Seismic modeling not only helps to delineate reserves, it also significantly reduces environmental risk by increasing the likelihood that exploratory wells will successfully tap hydrocarbons and decreasing the number of wells that need to be drilled in a given area. This reduces the overall environmental impact of oil and gas development by limiting the footprint of exploration. Because survey activities are temporary and transitory, they are the least intrusive and most cost-effective means to understanding where recoverable oil and gas resources likely exist.

More than four decades of worldwide seismic surveying and scientific research indicate that the risk of physical injury to marine life from seismic survey activities is extremely low. Currently, there is no scientific evidence demonstrating biologically significant negative impacts to marine life from seismic surveying. As stated by the Bureau of Ocean Energy Management in its August 22, 2014, *Science Note*:

To date, there has been no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic activities adversely affecting marine animal populations or coastal communities. This technology has been used for more than 30 years around the world. It is still used in U.S. waters off of the Gulf of Mexico with no known detrimental impact to marine animal populations or to commercial fishing.

<http://www.boem.gov/BOEM-Science-Note-August-2014/>.

II. COMMENTS

The Associations want to again acknowledge the significant effort involved in examining the scientific literature available on the topic of marine sound and its potential impacts on marine mammals. We recognize that this topic is complex and informed by an evolving base of scientific knowledge, and we appreciate the challenges and effort associated with translating the available information into functional criteria. We continue to support the goal of updating and developing acoustic criteria that are informed by, and consistent with, the best available science. We also support a continued effort in furtherance of this goal that is transparent and does not result in unnecessary or unsupported new processes or requirements for the regulated community.

The Associations carefully reviewed and analyzed the first version of the Draft Guidance (“First Draft Guidance”) and provided many specific comments, in which we identified opportunities for improvement, requested clarity on technical issues, and addressed legal concerns. We appreciate NMFS’s consideration of our earlier comments, some of which have been addressed in the Second Draft Guidance. Below, we address new issues specific to the Second Draft Guidance as well as restate some of our earlier comments that do not appear to have been incorporated in the Second Draft Guidance. We have divided these comments into those that are largely related to “procedural” matters and those that are largely related to “technical” matters (recognizing that there may be some overlap in these general categories). On the whole, the Associations support the agency’s issuance of the Second Draft Guidance in final, subject to the comments and recommendations provided below, which are intended to be constructive and to further improve the final guidance document.

A. Procedural Comments

1. Regulatory impacts

Marine mammal incidental take authorizations (“ITAs”) for the oil and gas industry have, for many years, been authorized by NMFS and the U.S. Fish and Wildlife Service. The best available science demonstrates that these authorizations have resulted in no detectable adverse impacts to marine mammal populations and that related monitoring and mitigation measures are effective. Although we support NMFS’s development of new criteria that are consistent with the best available science, these new criteria should not be implemented in a manner that results in increased regulatory burdens. The Associations are concerned that the Second Draft Guidance will require more time, more advanced technical expertise, and, therefore, higher costs associated with the preparation and federal review of ITA applications. The lack of guidance regarding the implementation of the new criteria (addressed below) will create regulatory uncertainty and result in unnecessarily burdensome and inconsistent permitting processes.

In this light, the Second Draft Guidance does not provide a full explanation of the anticipated impact of the proposed threshold levels and related modeling techniques on the regulated community, and there is no clear discussion of the regulatory implications of the proposed changes. In the final guidance, NMFS should provide a thorough explanation of the anticipated regulatory and economic impacts. Because the final guidance will be applied in a range of regulatory actions, we continue to recommend that, before the acoustic criteria become final, NMFS undertake a comparative assessment of the approach described in the Second Draft Guidance with the current assessment methods to demonstrate the regulatory implications of the proposed criteria. We recognize that the proposed metrics in the Second Draft Guidance are not directly comparable to current assessment methods, but we believe it is possible, and would be informative, to generally evaluate the regulatory impacts of both approaches for applicants.¹ Such scenarios or simulations could clarify implementation issues, but may also reveal limitations or unintended consequences that could be addressed before the new criteria are used in regulatory actions.

¹ In the same vein, in the *Supplemental Draft Environmental Impact Statement Effects of Oil and Gas Activities in the Arctic Ocean*, which was released March 21, 2013, NMFS stated its intent to incorporate the new acoustic criteria into the final environmental impact statement (“EIS”). We urge, due to the lack of clarity on the regulatory impact from implementation of the guidance, that the public be given an opportunity to provide written comments, in advance, regarding the incorporation of the final acoustic criteria into the Arctic EIS. This will ensure that the public can review and comment on the application of the acoustic criteria in the Arctic EIS.

2. Implementation concerns

As an initial matter, the Second Draft Guidance provides no clear explanation for how the agency uses “guidance,” the legal import of a guidance document, when the agency can and cannot deviate from guidance (as opposed to regulatory requirements), and how the agency will evaluate any deviations proposed by applicants. A clear discussion of these issues at the beginning of the document would be helpful and informative for the regulated community and the general public.

Additionally, the Second Draft Guidance presents uncertainty and potential complications regarding the implementation of the proposed criteria. As indicated above, the complexity of the methods proposed in the Second Draft Guidance will result in increased time and expenses and additional technical expertise for applicants, and will almost certainly lead to confusion in the regulated community as well as inconsistent applications and inefficient permitting processes. Although the Second Draft Guidance provides some general context for how the proposed criteria will be implemented, it does not provide a meaningful discussion outlining the key practical aspects or standards to be applied for the implementation of the criteria.

To eliminate uncertainty and potential future complications, the final guidance document should include a specific recommendation (with supporting analysis)² of how the implementation of the proposed criteria will affect existing offshore activities, monitoring protocols, estimated incidental take assessment, and the development of mitigation measures.³ For example, NMFS currently requires shut down and/or power down mitigation measures that are based on specific, non-cumulative acoustic criteria. However, the Second Draft Guidance contains no meaningful discussion about how similar avoidance-based mitigation measures will be implemented under the new criteria. The document also provides very little guidance to applicants regarding the take estimation methods (as opposed to exposure estimation) that the agency would prefer to be used in ITA applications.

² We strongly recommend that NMFS undertake a modeling exercise using available industry data and work with industry in developing a realistic scenario before publication of the final guidance. Completing a specific modeling exercise with the proposed draft criteria will provide the regulated community with proper guidance and clarity on how the proposed criteria should be implemented.

³ See 67 Fed. Reg. 8452, 8459 (Feb. 22, 2012) (“In assessing the usefulness of information that the agency disseminates to the public, the agency needs to consider the uses of the information not only from the perspective of the agency but also from the perspective of the public.”). As indicated above, we also recommend that the final guidance include a summary of the additional costs that are expected to result from implementation of the new criteria, with a comparison of the expected benefits.

We agree that it is important for NMFS to allow for sufficient flexibility in the regulatory process so that applicants can appropriately address the specific situations that arise in their ITA requests. Such flexibility enables innovation within the bounds of regulatory compliance. For example, there are many ways to estimate potential exposures of marine mammals to various sound levels, and future applicants should not be limited to estimating exposures using the specific criteria set forth in the Second Draft Guidance (or in Appendix E) if there are other methods that are more appropriate and scientifically justified.⁴ However, balanced against that flexibility, general guidance from the agency regarding take estimation methodologies and application of avoidance and mitigation measures—even if provided as nonexclusive examples—would be informative and would facilitate efficient and consistent permitting processes.⁵ Moreover, such general guidance would increase transparency, allow for more informed public review and comment, and help to “ensur[e] and maximiz[e] the quality, objectivity, utility, and integrity” of the information provided in the Second Draft Guidance, as required by the Information Quality Act. *See* Pub. L. No. 106-554, § 515 (2000); *see also* 67 Fed. Reg. at 8456 (“The more important benefit of transparency is that the public will be able to assess how much an agency’s analytic result hinges on the specific analytic choices made by the agency. Concreteness about analytic choices allows, for example, the implications of alternative technical choices to be readily assessed.”).⁶

⁴ It would be helpful for the final guidance document to provide more clarity regarding the timing and process for applicants that wish to utilize alternative approaches in their ITA applications.

⁵ As addressed in our comments on the First Draft Guidance, NMFS can improve the usefulness of new criteria by providing a “user guide” that will inform and assist NMFS’s implementation of the new acoustic criteria. If NMFS were to prepare a user guide, it should provide a draft for public review and input. In addition, IAGC is working with its members to develop processes to assist with the preparation of ITA applications and would welcome the opportunity to collaborate with NMFS, where appropriate, on efforts that facilitate efficient and consistent regulatory processes based on the best available science.

⁶ NMFS considers the Second Draft Guidance to be a “highly influential scientific assessment” subject to the *National Oceanic and Atmospheric Administration Information Quality Guidelines* (“NOAA IQG”). “[I]nfluential scientific, financial, or statistical information” is specifically held to higher information quality standards. *See* 67 Fed. Reg. at 8452, 8455 (“OMB guidelines apply stricter quality standards to the dissemination of information that is considered ‘influential.’”). These standards further counsel in favor of more information addressing the implications and implementation of the proposed criteria. *See generally* NOAA IQG at 1-2.

3. Consideration of qualitative factors

The Second Draft Guidance also recommends that certain qualitative factors be “considered within the comprehensive effects analysis.” Second Draft Guidance at 29. However, the document provides little discussion regarding how these qualitative factors will be considered, the relative weight given to these factors, or how these factors will be implemented. We encourage the agency’s consideration of qualitative factors in a manner that adds flexibility to the regulatory process and recommend that NMFS include more discussion in the final guidance regarding the application of qualitative factors. In addition, the discussion of qualitative factors in the Second Draft Guidance indicates that NMFS does not intend for qualitative information to be “used to reduce quantitatively predicted exposures produced by acoustic threshold levels.” Second Draft Guidance at 30. However, in many instances, consideration of qualitative factors (such as violation of the EEH or the failure to account for recovery in the 24-hour cumulative calculation) may demonstrate that there is less risk of PTS occurring than the quantitative analysis predicts. In these circumstances, consistent with the agency’s obligation to use the best available science and information, the qualitative information should be factored into the estimated exposure and take analyses, whether it results in an increase or decrease in the number of predicted incidental takes.

4. TTS thresholds and Level B harassment

The Second Draft Guidance appropriately concludes that TTS is not an “injury” for Marine Mammal Protection Act (“MMPA”) purposes and should, at most, be considered Level B harassment. The Associations concur with this finding, as it is based on the best available scientific information. However, the Second Draft Guidance also states that the TTS threshold levels “will be used in the comprehensive effects analyses under the MMPA and the Endangered Species Act (“ESA”) and *may* inform the development of mitigation and monitoring.” Second Draft Guidance at 40 (emphasis in original). Respectfully, this cryptic statement provides no meaningful value to the regulated community and, instead, creates uncertainty and confusion regarding NMFS’s intentions for future regulatory processes. We strongly recommend that NMFS provide more clarity and discussion in the final guidance regarding how the TTS threshold levels may or may not inform mitigation and monitoring. Without clarity from the agency on this topic, future ITA applicants will have no direction on whether and how they should address the TTS threshold levels when developing the mitigation and monitoring measures to be proposed in their applications.

In addition, the Second Draft Guidance does not address a significant category of Level B take (i.e., behavioral harassment), but also provides no explanation for how ITA applications will be processed after the new Level A thresholds are issued and before new Level B thresholds are developed. It would greatly improve the regulated community’s ability to meaningfully assess the implications of the proposed criteria if the final guidance includes an explanation for how the proposed acoustic criteria will be implemented in the absence of new criteria applicable to Level B behavioral harassment. It is also not clear from the Second Draft Guidance as to how NMFS

will specifically use the TTS threshold levels in the permitting process before behavioral modification criteria are finalized. For instance, it is unclear as to whether NMFS is going to require the use of three separate take thresholds (for PTS, TTS, and behavioral modification) and, if so, how NMFS will ensure that the permitting and implementation processes do not become too burdensome and complex. The Second Draft Guidance suggests that the TTS thresholds will not be used for “take quantification” purposes until the Level B threshold levels are developed; however, it also states that the TTS threshold levels will presently “be used in the comprehensive effects analyses under the MMPA and the ESA.” *Id.* The final guidance should clarify these statements and more fully explain how these issues will be addressed in ITA permitting processes.

5. Ongoing review of the best available science

We commend NMFS for its commitment to undertake review and revision of the final guidance on a regular basis to incorporate knowledge as it is acquired. We further suggest that NMFS maintain flexibility to promptly consider and address highly relevant new information that arises between the agency’s formal reviews. In addition, we encourage NMFS to continue supporting the science that has been, and is being, developed under the Sound and Marine Life Joint Industry Programme. See <http://www.soundandmarinelife.org/>. This program is one of the few coordinated efforts focused specifically on increasing the scientific understanding of the effects of sound on marine life.

6. NMSA concerns

The Second Draft Guidance clarifies that the new threshold criteria will be considered by NMFS and the Office of National Marine Sanctuaries for purposes of the National Marine Sanctuaries Act (“NMSA”). The Second Draft Guidance goes on to state, without any explanation, that TTS and “behavioral impacts” constitute “injury,” as that term is defined in the NMSA. See 15 C.F.R. § 922.3 (“injure” is defined as to “change adversely, either in the short or long term, a chemical, biological or physical attribute of, or the viability of”). It is not clear why the agency has made this conclusion, and, indeed, the studies cited in the Second Draft Guidance are not consistent with this conclusion. See Second Draft Guidance at 44 (citing Southall et al. (2007) (TTS is not a tissue injury) and Ward (1997) (“TTS is within the normal bounds of physiological variability and tolerance and does not represent physical injury”). If NOAA is determined to make such a sweeping legal conclusion regarding the application of the new criteria to the NMSA consultation process, then it must provide a detailed and well-supported explanation based on applicable law and the best available science. In addition, the public should have the opportunity to review and comment on this explanation, consistent with Administrative Procedure Act requirements.

B. Technical Comments

1. Alternative approach for estimating exposure

We appreciate NMFS's effort to provide a simplified alternative method for calculating estimated exposures to sound at the levels set forth in the Second Draft Guidance (Appendix E). However, while this alternative method might provide flexibility for calculations, simplifying the application of weighting functions as well as the source/receptor movement scenarios for SEL_{cum} calculations will introduce variability across activities, resulting in significant overestimation of exposure numbers. NMFS indicates in the Second Draft Guidance that it is prepared to provide tools to enable applicants to apply frequency-specific weighting functions without necessarily performing the mathematical calculations. However, these tools have not been made available for public review. Moreover, this two-tiered system for estimating exposures could have inequitable results for operators who, for either cost or time reasons, may not be able to use the more complicated applied weighted factor methodology and will resort to applying for an ITA that overestimates the amount of incidental take actually caused by the underlying activity.⁷ We strongly recommend that NMFS include a detailed discussion in the final guidance that informs applicants about the potential costs, benefits, and consequences of each of the two methodologies described in the Second Draft Guidance.⁸

Specifically, the final guidance should provide examples that demonstrate the quantitative metrics of the difference in outcome for a number of given signals when individual-based models are used and when Appendix E methods are applied. These examples should include comparison calculations that indicate how use of the "safe distance" calculation differs from models in which exposure is accumulated for individual computer entities (e.g., "animats") that may or may not move relative to the source. In addition, there are other assumptions in this "safe distance" calculation, such as exposures occurring at a constant depth and exposures being constant over a consistent swath for 24 hours, that may contribute to overestimation of exposure and that should be quantitatively demonstrated (or disproven) by calculated examples rather than requiring the user to assume that the "rounding error" associated with the Appendix E methodology is not significantly different than performing a more sophisticated analysis.

⁷ This will have negative impacts that extend beyond a single applicant. For example, if the incidental take estimate in a five-year incidental take regulation ("ITR") is based on the Appendix E methodology, then the estimate will be unrealistically high. Alternatively, if an ITR is based on a weighted approach using contemporary modeling, then letter of authorization applicants that use the unweighted approach may complicate the agency's ability to reasonably manage and implement the ITR. These are significant issues that, among others, are not addressed in the Second Draft Guidance.

⁸ The Associations recognize that the simplified movement methodology may be used in non-U.S. jurisdictions where there is less regulatory focus on exposure numbers.

2. Transition from impulsive to non-impulsive acoustic threshold levels

The Second Draft Guidance acknowledges that most analyses are based on sound characteristics at the source and that NMFS analyzes impacts at the receiver, which is provided as justification for creating an impulsive to non-impulsive transition zone at 3 km. NMFS recommends this 3 km transition zone based on a “peak pressure to pulse duration of 5000” as “an appropriately precautionary approximation of where most impulsive sound sources begin to transition to having physical characteristics less likely to result in auditory injury.” Second Draft Guidance at 119. We are aware of no biological basis for this assumption, and it appears to have been chosen through an arbitrary process of attempting to identify a value that generally provides a consistent break in the pressure/duration ratio (although the available data vary considerably). However, as NMFS recognizes, a pressure duration ratio of 5,000 is more often attained at ranges of 1-2 km, rather than 3 km as stated in Table B2, which argues even more strongly for a different criterion for switching from impulse to continuous thresholds. Contributions to spreading of the acoustic energy over time include frequency-differential travel paths and times, and multi-path reflections from the surface and bottom, as well as refractive effects within the water column and geology of the sea bottom. These effects do not usually contribute substantively to signal “spread” at such short ranges, especially in deep water. Furthermore, the possibility of multiple pressure peaks from multi-path propagation and frequency-differential propagation effects suggest that weighting calculations and even integration time windows might need to be changed at different distances in order to correctly characterize the dynamic change from an impulse waveform to something increasingly resembling a “continuous” sound of highly varying duration, frequency structure, and pressure peak(s). Instead of using this arbitrary process, NMFS should have applied the time/amplitude waveforms from the examples used in the Second Draft Guidance to generate the transition threshold, and then should have generated examples showing the difference that would result from applying impulse and non-impulse criteria at these ranges (1-3 km).

We recommend that NMFS prepare further quantitative applications of various source types and scenarios, include full explanations in the final guidance, and provide, as appropriate, a revised transition range for impulsive to non-impulsive acoustic threshold levels. In addition, we recommend that NMFS clearly state that establishing such a transition from impulsive to non-impulsive only applies to Level A harassment and not Level B harassment.

3. Accumulation period

The period over which SEL_{cum} is calculated is stated as 24 hours; however, there is no discussion in the Second Draft Guidance regarding the potential for recovery between pulses or intermittent periods of exposure within this 24-hour period. This is a significant issue that is not directly addressed in the Second Draft Guidance but that, if addressed, would potentially lead to more realistic results. In addition, although the Second Draft Guidance makes allowances for a shorter accumulation period, it does not, but should, make similar allowances for a longer accumulation period.

4. Proposed threshold limits

In addition to the comments set forth above, we have the following specific comments regarding certain elements of the proposed threshold limits:

- The upper and lower threshold limits are not set consistently as they were in Southall et al. (2007) at 80 dB above threshold of best hearing. For example, the upper threshold limit for phocid seals of 100 kHz is based on Kastelein et al. (2009), in which the threshold at 100 kHz is much higher than 80 dB above best hearing.
- The very low threshold limits presented for high-frequency cetaceans are based almost exclusively on a single study (Lucke et al. 2009). These data are most likely to be obtained by using Evoked Potential (“EP”) methods, rather than behavioral methods, which necessitates a change in acceptance of EP data since the criteria set forth in the Second Draft Guidance (and in the paper from which the criteria are derived) do not incorporate the extensive and growing body of EP hearing data. Finneran (2015) and NMFS provide an explanation based on the different outcomes of EP and behavioral testing. However, studies by Finneran, Popov, and other researchers are demonstrating that this relationship is consistent and, accordingly, that NMFS should allow greater reliance on EP data in future iterations of the guidance.
- The upper end of the auditory weighting function for low-frequency cetaceans—which is reduced from 30 to 25 kHz—is a significant improvement. The 25 kHz value is still arguably too high, but it is more consistent with the best available science than was the value proposed in the First Draft Guidance.
- The method used to arrive at a SEL_{cum} PTS threshold for low-frequency cetaceans and seals is determined in the Second Draft Guidance to be “unrealistic” for arriving at a peak-pressure PTS threshold for those groups, but no explanation is given for this conclusion. This section of the Second Draft Guidance needs more explanation.
- The method for deriving PTS onset values (SEL_{cum} and peak) from TTS onset threshold for impulse sounds is not well explained in the Second Draft Guidance. It appears that a very basic method was used, which the Associations understand may have been necessitated by the paucity of available data. Nonetheless, a more complete explanation of the values selected should be provided in the final guidance.

5. Sound source verification

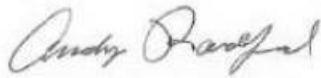
It is not clear from the Second Draft Guidance whether NMFS will require sound source verification (“SSV”) measurements to be made during permitted activities. In the experience of the Associations’ members, SSV poses a complicated and unnecessary burden on operations because the results of SSV are highly variable due to constantly changing conditions in the water column. If SSV is intended to be part of the standard protocol in the implementation of the new threshold levels, then it is important that the regulated community have the opportunity to provide informed input on this potential requirement and that it be based on the best available science.

III. CONCLUSION

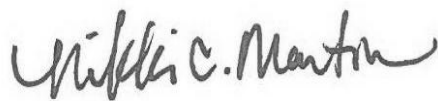
We appreciate the effort that NMFS has devoted to the Second Draft Guidance, which represents a significant improvement over both the First Draft Guidance and the acoustic criteria guidelines that are currently used by NMFS. The Associations will continue to support a process that is comprehensive, transparent, consistent with the best available science, and fully informed by the public. We specifically support issuance of the Second Draft Guidance in final, subject to the additional comments and recommendations provided above.

Should you have any questions, please contact the undersigned at 202.682.8584, or via email at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



Andy Radford
American Petroleum Institute



Nikki Martin
International Association of Geophysical Contractors



Joshua Kindred
Alaska Oil and Gas Association



March 30, 2016

VIA Federal eRulemaking Portal

Chief, Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226
Attn: Acoustic Guidance

Re: Comments on Proposed Changes to Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing—**NOAA-NMFS-2013-0177**

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute, the International Association of Geophysical Contractors, the Alaska Oil and Gas Association, and the National Ocean Industries Association (collectively, the “Associations”) in response to the National Oceanic and Atmospheric Administration’s (“NOAA”) notice and request for comments on proposed changes to NOAA’s Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (“Draft Guidance”). *See* 81 Fed. Reg. 14,095 (Mar. 16, 2016). The Associations previously submitted extensive comments on both the first and second versions of the Draft Guidance.¹ Our comments on the newly proposed changes to the Draft Guidance are set forth below.

I. INTRODUCTION

As stated in our previous comments, the Associations recognize that the topic of marine sound and its potential impacts on marine mammals are complex and informed by an evolving base of scientific knowledge, and we appreciate the challenges and effort associated with translating the available information into functional guidance criteria. We also appreciate

¹ We incorporate our previous comments by reference, and expect that those comments will be included in the administrative record and fully addressed by NOAA. Collectively, the Associations represent the vast majority of all stakeholders engaged in the exploration and development of offshore oil and gas resources in the United States. The Associations are described in more detail in our previous two comment letters.

NOAA's efforts to appropriately obtain public and peer review input on the first two versions of the Draft Guidance. The Associations have been fully engaged in this process and have spent substantial amounts of time and resources evaluating both versions of the Draft Guidance and preparing comments to constructively inform this important process. Our position has been, and continues to be, that we will support a process that is comprehensive, transparent, consistent with the best available science, and fully informed by the public.

Unfortunately, NOAA has suddenly proposed to incorporate changes to the Draft Guidance in a manner that is not comprehensive, transparent, or consistent with the best available science. These proposed changes, if finalized, will also not be meaningfully informed by the public. NOAA's proposed changes are substantial, significant, and result in very different criteria than were proposed in the 2015 version of the Draft Guidance. Despite the magnitude of these proposed changes, NOAA has provided little or no supporting scientific analyses or explanations, has not yet subjected the proposed changes to peer review, and has offered the public an insufficient 14 days to evaluate the proposed changes and provide comments.²

We struggle to understand how a process that began three years ago, and that was intended to meaningfully involve the public at all stages, has so abruptly and inexplicably changed course. Considering that development of the Draft Guidance is a multi-year process, it would have been reasonable for NOAA to afford the public more than 14 days to review and provide comments on the proposed changes, particularly when those changes will drastically affect the application of the Draft Guidance. We cannot support the arbitrary process the agency has adopted as a means to quickly implement significant and substantial changes immediately prior to finalizing the Draft Guidance. Below, we have endeavored to provide objective comments as best we can in the short time allowed for public comment.

We recommend that NOAA retract the March 2016 proposed changes and instead engage in the peer review process applicable to highly influential scientific assessments, as occurred with the first and second versions of the Draft Guidance. Once that process is completed, NOAA should re-propose any necessary changes to the 2015 Draft Guidance and provide for a sufficient public review and comment period. If NOAA finds it necessary to produce final guidance before the process of incorporating any such changes can be completed, it should proceed with a final version of the 2015 Draft Guidance (revised, as appropriate, based on previously submitted public feedback), along with a user guide and implementation tools as promised in July 2015.

² Numerous requests for extensions of the public comment period were submitted to, and rejected by, NOAA.

II. PROCESS COMMENTS

Aside from the inadequate opportunity for public review and input, there are a number of other unsatisfactory aspects of NOAA's process for proposing changes to the Draft Guidance. These are detailed as follows.

First, although the proposed changes to the Draft Guidance are extensive and mathematically complex, they are incompletely documented and insufficiently explained in the March 2016 supplemental materials. This lack of substantive support is compounded by the fact that NOAA has not provided the technical tools or modeling scenarios that are necessary for the proper assessment of the new criteria and, particularly, the implications of the proposed changes. The absence of these user aids, which NOAA previously indicated would be made available, renders the analysis of the proposed changes very difficult and time-consuming. The completion of specific modeling scenarios or simulations is essential to inform the regulated community on how the proposed criteria will impact planning and operations during implementation. Additionally, such scenarios or simulations would also reveal limitations or unintended consequences that must be addressed before the new criteria (and particularly the proposed changes) are finalized and used in regulatory actions.³ NOAA's failure to provide the support necessary for the newly proposed criteria to be readily assessed further emphasizes the unreasonableness of the 14-day comment period.

Second, NOAA commissioned peer reviews of the first and second versions of the Draft Guidance before those versions were released for public review. As a result, the public was able to review and comment on draft criteria that were already informed by expert peer review, and summaries of the peer review results were provided to the public. In contrast, the currently proposed changes to the Draft Guidance were inexplicably rushed out for public review and comment without any peer review. NOAA states that it will, at some point, submit these proposed changes for peer review, which will almost certainly result in corrections and modifications to what is currently proposed. However, the public will have no opportunity to review and comment on the peer-reviewed version of the changes to the Draft Guidance.⁴

³ Rather than rushing significant changes to the Draft Guidance through an uninformed process, NOAA should be seeking to “ensur[e] and maximiz[e] the quality, objectivity, utility, and integrity” of the Draft Guidance, as required by the Information Quality Act. *See* Pub. L. No. 106-554, § 515 (2000); *see also* 67 Fed. Reg. 8452, 8456 (Feb. 22, 2012) (“The more important benefit of transparency is that the public will be able to assess how much an agency’s analytic result hinges on the specific analytic choices made by the agency. Concreteness about analytic choices allows, for example, the implications of alternative technical choices to be readily assessed.”).

⁴ NOAA admits that the Draft Guidance is a “highly influential scientific assessment” subject to the *National Oceanic and Atmospheric Administration Information Quality Guidelines* (continued . . .)

Third, NOAA’s statement that it may “re-evaluate [its] methodology for LF [low-frequency] cetaceans when th[e] updated Southall et al. publication becomes available” further raises the question of why NOAA is hurriedly implementing the proposed changes now. Given the significance of the proposed changes, and the fact that the proposed criteria may change again upon release of the anticipated Southall *et al.* publication (as referenced in footnote 3 of the March 2016 proposed changes to the Draft Guidance), the Associations request that NOAA expressly commit to updating the acoustic criteria no later than six months after the issuance of that publication. This request is particularly reasonable given that NOAA apparently plans to finalize the proposed acoustic criteria with full knowledge that the new Southall *et al.* paper will be published soon.

Fourth, NOAA continues to remain silent on how the agency plans to use the Draft Guidance, under what circumstances the agency believes it can and cannot deviate from guidance (as opposed to regulatory requirements), and how the agency will evaluate any deviations proposed by applicants. The errors and unjustified assumptions contained in the proposed changes further emphasize the fact that future applicants for incidental take authorization will almost certainly be compelled to propose analyses that necessarily deviate from NOAA’s acoustic criteria in order to remain faithful to the best available science.

Fifth, the proposed changes appear to be driven by (non-public) discussions internally among NOAA staff and possibly experts within the U.S. Navy. The proposed changes most significantly affect the thresholds applicable to low-frequency (“LF”) cetaceans, especially for LF sound sources. Sound produced by offshore oil and gas exploration and development activities is predominately LF, yet these proposed changes are being undertaken without any meaningful comment from the industry to which they are most relevant. Moreover, as indicated in our previous comments, our industry has continued to support relevant independent peer-reviewed science via the E&P Sound and Marine Life Joint Industry Programme (“JIP”). See <http://www.soundandmarinelife.org/>. Scientific results from JIP-funded independent research has and can continue to inform this process of developing meaningful criteria so long as the process is transparent, flexible, and consistent with the best available science.

(. . . continued)

and, therefore, to a peer review requirement. Moreover, “influential scientific, financial, or statistical information” is specifically held to higher information quality standards. See 67 Fed. Reg. at 8452, 8455 (“OMB guidelines apply stricter quality standards to the dissemination of information that is considered ‘influential.’”).

III. CONTENT COMMENTS

A. The Proposed Changes Applicable to LF Cetaceans Are Arbitrary and Contrary to the Best Available Science

The proposed changes to the LF cetacean weighting function parameter ‘*a*’ are scientifically unjustified and do not fit the models that NOAA references as support for these changes. As described below, the auditory curve and weighting functions that result from NOAA’s proposed model exhibit an anomalous LF slope that differs from all other marine mammal, human, and other mammalian hearing curves, as well as from the slopes of both the rejected and cited references for modeling hearing in LF cetaceans.

NOAA recognizes that “[m]ost mammals for which thresholds have been measured have low-frequency slopes ranging from 30-40 dB/decade.” Accordingly, the audiogram, and therefore the weighting function, should change from zero dB at 1 kHz to 30-40 dB at 100 Hz, and 60-80 dB at 10 Hz. However, instead of using the data that NOAA acknowledges are most accurate, NOAA proposes the “most conservative” metric by arbitrarily halving the data-supported metric to arrive at the proposed 20 dB/decade slope. The significance of this proposal, and its departure from the best available information, is readily depicted in Figure PC1,⁵ which clearly shows that the NOAA-proposed slope differs significantly from the two sources referenced by NOAA (Cranford and Krysl 2015; Houser et al. 2001). At 100 Hz, NOAA’s new proposal predicts hearing that is only 10 dB worse than best hearing, whereas both the Cranford and Houser models predict decrements of 25-35 dB at the same frequency. The slope of the proposed curve from 1000 to 10 Hz is less than 20 dB/decade, but the slope of the Cranford and Houser models is approximately 25 dB/decade. NOAA’s proposed departure from the best science is also highlighted in Figure PC2,⁶ in which the slope of the left side of the LF cetacean curve stands out as an anomaly compared to the other slopes presented in Figure PC2.

Another anomalous consequence of the LF cetacean slope proposed by NOAA is that there is no point at which LF cetacean hearing crosses the stated 80 dB range above best hearing. In other words, the proposed model provides no lower limit for whale hearing. Our graph demonstrates this anomaly (Fig. 1).

⁵ NOAA Proposed Changes: DRAFT Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. Mar. 2016.

⁶ NOAA Proposed Changes: DRAFT Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. Mar. 2016.

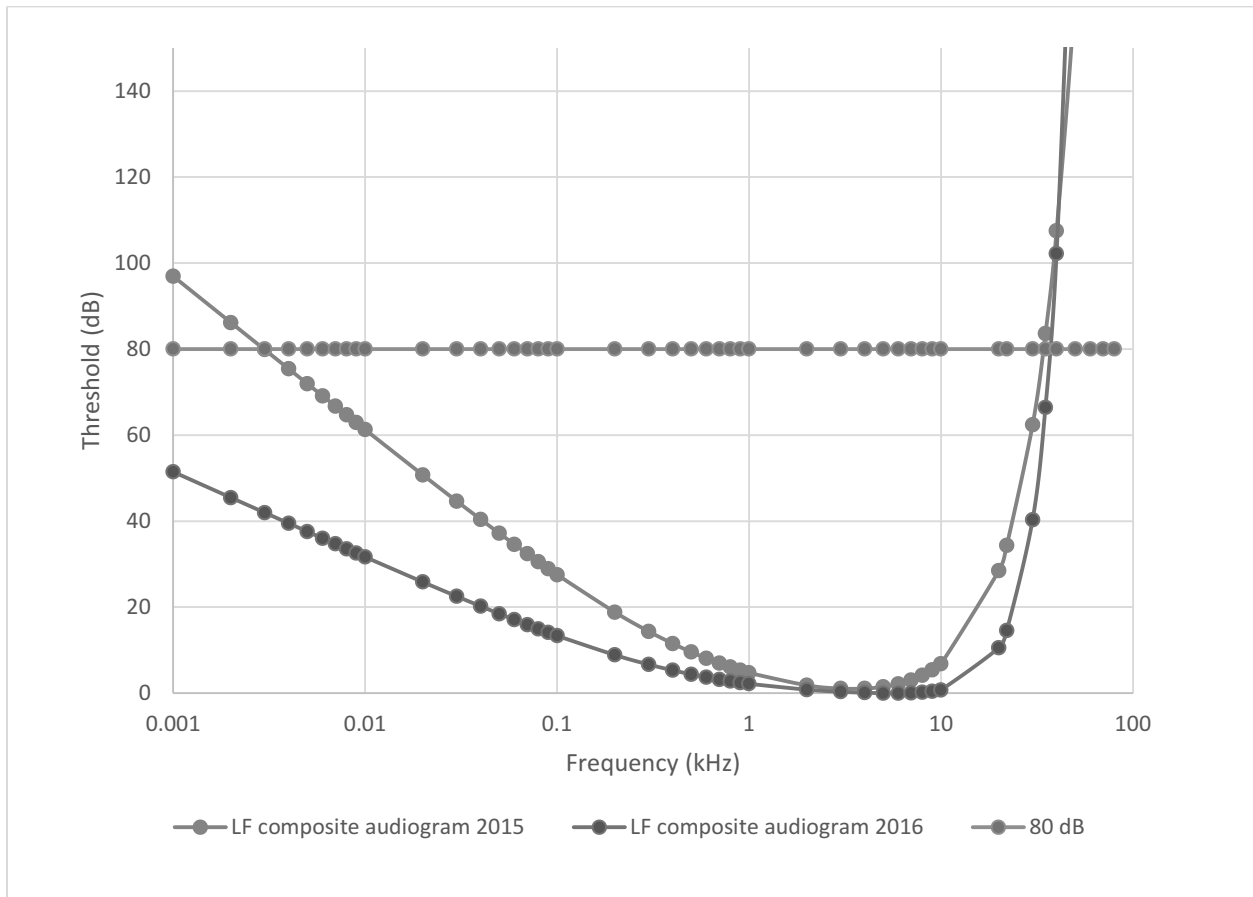


Figure 1. The consequence of the proposed changes to the LF cetacean modeled audiogram (in red) produce a hearing curve at the lowest frequencies that never approaches the 80 dB decrement from best hearing (in green) that NOAA had set as the upper and lower limiting frequencies of hearing (also a general mammalian metric of upper and lower hearing limits). The July 2015 modeled hearing curve (in blue), on the other hand, produces a crossing point with the 80 dB threshold at 3 Hz that provides a reasonable if generous lower limit of hearing.

In addition, on page 7 of the 2016 proposed changes, NOAA reviews four models for frequencies of best hearing and states that these models predict “thresholds within ~40 dB of best sensitivity as low as ~30 Hz and up to 25 kHz.” However, rather than use the predictions of these models, NOAA proposes a curve that predicts LF cetaceans can hear 30 Hz at 10 dB above best hearing, not 40 dB. Under NOAA’s model, whales could even hear sound at 10 Hz with only a 25 dB decrement from best hearing—which the best available science for baleen whale hearing modeling (*e.g.*, Houser et al. 2001; Cranford and Krysl 2015) and general mammalian hearing data strongly suggests is impossible. *See infra* footnote 8.

The impact of the new LF cetacean parameters is immediately obvious in our Figure 2 below, which compares Figure PC3⁷ of the new 2016 criteria (*see right plot below*) with the curve depicted in NOAA 2015 Draft Guidance (page 12) (*see left plot below*). In contrast to the similar shapes of all the 2015 weighting functions, the new LF cetacean curve produces a biologically unrealistic, extended, and flattened curve.

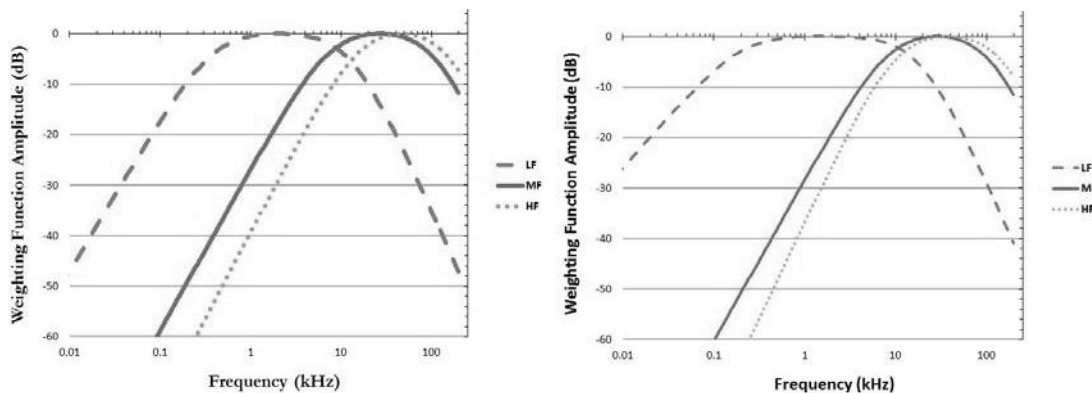


Figure 2. The left plot shows initial July 2015 cetacean weighting functions: LF in dashed blue, MF cetacean in red and HF cetacean in dotted black. While the frequency range of best hearing for LF cetaceans is conservatively generous given uncertainties in the models, the slope of the weighting functions are all parallel, consistent with what is generally observed across mammalian hearing and weighting functions. The right plot shows that the modified March 2016 weighting functions not only create a much broader and obviously unrealistic span of best hearing (the flat upper part of the curve normalized to zero), but also provide a slope of increased weighting (decreased hearing ability) at the lower frequencies that is clearly out of alignment with the measured decrement of hearing acuity in all other marine mammals, as well as for mammals in general, including other LF specialist species.

NOAA's proposed LF cetacean model also sharply deviates from data pertinent to other LF specialist mammals. For example, humans are LF hearing specialists that have a best hearing range of approximately 400 Hz to 16 kHz.⁸ But, unlike the LF cetacean model proposed by NOAA, human hearing ability is 25 dB below best hearing at 200 Hz—not the 10 Hz value generated by NOAA's proposed hearing curve. As another example, the kangaroo rat (another LF hearing specialist) has best hearing that starts to diminish at approximately 500 Hz. By 100 Hz, the kangaroo rat's hearing threshold is at least 10 dB above best hearing, and at 20-30 Hz is

⁷ NOAA Proposed Changes: DRAFT Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. Mar. 2016.

⁸ A comprehensive summary of human hearing data can be viewed here: http://www.iso.org/iso/catalogue_detail.htm?csnumber=34222, which includes reference to the seminal Fletcher and Munson curve (JASA 5, 82-108;1933).

40-60 dB above best hearing.⁹ In contrast, under NOAA's proposed LF cetacean model, whale hearing at 30 Hz is still within 10 dB of best hearing (1 kHz)—even though every other LF specialist mammal experiences an increase in threshold of more than 40 dB across the same frequency span. It is contrary to best available science to have a model that predicts a slope for LF hearing fall-off that is far flatter than that of any other mammal, and that does not predict an LF limit for the auditory system at all.¹⁰

Overall, NOAA's proposed changes result in unsupported conclusions that LF cetaceans are able to hear a broader range of frequencies at lower sound levels, compared to the 2015 version of the Draft Guidance. These changes will result in significantly longer ranges to potential permanent threshold shift ("PTS")/temporary threshold shift ("TTS"; *see infra* Section III.C) thresholds. When coupled with other unrealistic changes such as the slope of the LF hearing and weighting curves (discussed above) and the application of high-frequency ("HF") specialist harbor porpoise dynamic range data to the LF cetacean group, the new criteria result in unrealistic thresholds of PTS risk and ranges that are approximately up to eight times greater than those produced by the peer-reviewed July 2015 Draft Guidance (based on modeling scenario results with previous guidance thresholds and some initial calculations with the 2016 changes conducted within the limited time allotted for public comments).

More generally, NOAA's approach to statistical uncertainty results in unrealistic conclusions because NOAA makes improbably conservative assumptions at each step of the analysis, and these compounded assumptions accumulate substantial errors in the end result, as is apparent with the proposed LF cetacean model. These erroneous assumptions are further compounded by the absence of empirical data and by NOAA's failure to test confidence in its curve fitting of non-linear relationships between data input and weighting functions. It is not apparent that NOAA has used any of the acceptable methods to account for limited data, such as those that have been suggested in public comments submitted on the previous versions of the Draft Guidance. In sum, the Associations object to the proposed changes to the LF cetacean criteria because they are not supported by the best available science and are the result of extrapolated conjecture based upon arbitrary and unsupported assumptions.

⁹ See Shaffer, L.A. and G.R. Long. 2004. Low-frequency distortion product otoacoustic emissions in two species of kangaroo rats: implications for auditory sensitivity. *J. Comp. Physiol. A* (2004) 190:55-60.

¹⁰ We agree with NOAA's statement that the frequency structure of an animal's vocalizations is not a good predictor of hearing sensitivity. The fact that blue whales, fin whales, and other baleen whale species may produce sound below 100 Hz should not be construed to mean that those are the frequencies of best hearing.

B. The Proposed Changes Applicable to Phocid (“PW”) Pinnipeds Are Arbitrary and Unexplained

NOAA has proposed similar changes to the PW pinniped parameter ‘*a*’. These proposed changes are apparently due to the elimination of some data points, the reasons for which are not clearly explained. NOAA begins by stating that it is removing datasets containing “individuals with hearing loss” and individuals with hearing “not representative of their functional hearing group.” However, neither of these reasons is the stated basis for the removal of four of the five peer-reviewed datasets. Instead, NOAA states that it has removed those datasets “due to high thresholds likely being masked.”

NOAA provides no explanation for why these data are believed to suffer from masking-related issues more significantly than any other audiogram data used to support the Draft Guidance. As NOAA knows, masking is a common problem when conducting studies to develop audiograms, and the degree to which it is controlled can vary considerably from one study to the next. Before removing the data, NOAA must provide a specific explanation for why these particular datasets contain unique masking problems that are unlike the other datasets upon which the Draft Guidance relies.

C. The Proposed Changes Applicable to Peak Sound Pressure Acoustic Threshold Levels Are Partially Acceptable but Contain Serious Flaws

We generally agree that removal of SPL_{peak} acoustic threshold levels for non-impulsive sounds is reasonable as it would be quite rare that continuous sounds would have a peak level that causes potential impacts at distances greater than the SEL_{cum} metric would predict. We also support NOAA’s proposal to adopt the national and international standard of dynamic range as the difference between the auditory threshold and the threshold of pain.

However, the specifically proposed changes to parameter ‘*K*’—a metric of hearing dynamic range—are arbitrary and not based on a rigorous scientific rationale. The creation of a new TTS threshold for LF cetaceans by averaging the MF cetacean TTS threshold with the clearly anomalous and unique porpoise TTS threshold is not a science-based decision, but one designed to introduce added “precaution” to a dynamic range substitute (*i.e.*, TTS) that already contains multiple conservative assumptions relative to the normative human dynamic range definition.

The onset of TTS is not the same as the onset of pain. In fact, TTS was adopted as a measurable metric of marine mammal hearing upper limits specifically because it fell below the levels associated with PTS and pain in humans. The difference between TTS onset in humans and onset of pain is about 40 dB (Melnick 1991¹¹), and it is reasonable to expect that the

¹¹ Melnick, W. 1991. Human temporary threshold shift (TTS) and damage risk. J. Acoust. Soc. Am. 90(1), July 1991.

difference would be the same or greater for marine mammals, given the shorter durations of exposure and lower levels of induced TTS used in marine mammal TTS standards relative to human TTS standards. For these reasons, the MF cetacean dynamic range metric in the 2015 version of the Draft Guidance already represented a compromise to err on the side of caution. Application of the hybrid weighting function is unwarranted for LF cetaceans. We would also point out that substitution of this same MF/HF hybrid weighting function is unnecessary for both pinniped groups (PW and OW), since they both possess sufficient data within their own taxonomic group (*e.g.*, Kastak et al. 2005¹²) to support a dynamic range metric based on their own data as set forth in the July 2015 Draft Guidance, without having to resort to the unwarranted generation of a dynamic range metric based on a scientifically unjustifiable averaging of two very different hearing groups.

D. NOAA’s Proposal to Move White-Beaked Dolphins from the MF Cetacean Group to the HF Cetacean Group Lacks Sufficient Supporting Data and Analysis

NOAA provides no substantive explanation for its conclusion that the white-beaked dolphin’s audiogram is “more similar” to other HF cetaceans (*e.g.*, harbor porpoise). At a minimum, it would have been reasonable for the agency to provide a figure comparing the two audiograms, along with a discussion of the differences between the auditory evoked potential-derived white-beaked common dolphin audiogram and the behaviorally derived harbor porpoise audiograms. NOAA also fails to provide the actual parameter estimates for the revised composite audiograms. Although NOAA does provide the parameter estimates for the weighting function derived from the revised composite audiogram, and these may be used to infer what changes were made, the lack of disclosure of a complete revised analysis, with comparisons, makes it essentially impossible to meaningfully assess the differences, and comment on them.

E. NOAA’s Proposed Update of the HF Cetacean Audiogram Lacks a Sufficient Explanation

We generally agree that it is appropriate to add another audiogram to derive a composite audiogram for the HF cetacean hearing group. However, again, NOAA fails to provide the parameter estimates for the updated HF audiogram, which makes it impossible to conduct a meaningful comparison to the 2015 Draft Guidance within the 14-day comment period. As with essentially all the changes NOAA has proposed, the agency has provided incomplete information and failed to present clear comparisons between the 2015 Draft Guidance and the currently proposed revisions.

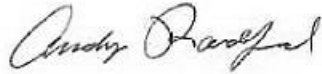
¹² Kastak, D., B. Southall, R. Schusterman, and C. Kastak. 2005. Underwater temporary threshold shift in pinnipeds: Effects of noise level and duration. *J. Acoust. Soc. Am.* 118(5), Nov. 2005.

IV. CONCLUSION

We are genuinely disappointed that what was a constructive process involving meaningful public input has been supplanted with the abrupt issuance of arbitrary conclusions resulting from NOAA's election to prioritize speedy, unilateral, and rash decision-making above transparency, diligence, and adherence to best science. As set forth above, we cannot support the adoption of the 2016 proposed changes, particularly when the changes modify criteria that were already peer reviewed and subject to a reasonable public review and comment period. We urge NOAA to correct this failure of process, policy, and science by re-engaging in an appropriate process, as recommended in Section I *supra*, to incorporate any changes to the 2015 Draft Guidance that may be necessary.

Should you have any questions, please contact the undersigned at 202.682.8584, or via email at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



Andy Radford
American Petroleum Institute
Sr. Policy Advisor - Offshore



Nikki Martin
International Association of Geophysical Contractors
President



Josh Kindred
Alaska Oil and Gas Association
Environmental Counsel



Jeff Vorberger
National Ocean Industries Association
Vice President, Policy and Government Affairs

cc: U.S. Senate Committee on Energy and Natural Resources
U.S. House Committee on Natural Resources
Dr. Jill Lewandowski, BOEM, Division of Environmental Assessment Chief

ATTACHMENT F



September 9, 2016

VIA Email

Dr. Jill Lewandowski
Chief, Division of Environmental Assessment
Bureau of Ocean Energy Management

Ms. Jolie Harrison
Chief, Permits and Conservation Division
National Marine Fisheries Service

Re: Draft G&G Monitoring Plan Concept for Marine Mammals in the Gulf of Mexico

Dear Dr. Lewandowski & Ms. Harrison:

We write on behalf of the American Petroleum Institute (“API”) and the International Association of Geophysical Contractors (“IAGC”) (together, the “Associations”) to provide the Bureau of Ocean Energy Management (“BOEM”) and the National Marine Fisheries Service (“NMFS”) (together, the “Agencies”) with our recommended draft concept for a Monitoring Plan (“MP”) for marine mammals in the Gulf of Mexico (“GOM”). The MP, as described in the attached concept paper, would both (i) accommodate the monitoring necessary to satisfy NMFS’s obligations under the Marine Mammal Protection Act (“MMPA”) with respect to the forthcoming incidental take regulations (“ITRs”) for geophysical surveys in the GOM, and (ii) advance a framework for the efficient compilation, review, and adaptive management response for a wide variety of monitoring data and information relevant to GOM marine mammal species of interest and marine mammal responses to sound from oil and natural gas geological and geophysical (G&G) activities. Respectfully, we believe this draft concept for the MP and associated draft framework will benefit marine mammals in the GOM, the interested public, the regulated industry, and the Agencies in carrying out their respective missions.

The Associations have a strong interest in environmental monitoring; both to better understand the environment in which our members work, but also to mitigate potential risks to living marine resources. The Associations support efforts that improve the quantity and quality of information related to determining the nature and magnitude of the effects of offshore G&G activities on marine mammals. Such information assists with performing accurate incidental take MMPA authorizations, developing appropriate mitigation measures to minimize incidental take, and correctly assessing the type and amount of incidental take that occurs in the course of

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G&G operations. In this light, the Associations support both ongoing and future research endeavors by industry and its partners related to determining and mitigating the effects of G&G activities on marine life in the GOM. We also support agency efforts to improve the collection and use of the best available science consistent with the requirements and limits of the MMPA.

Nonetheless, the Associations have expressed concern on multiple occasions that the Agencies' envisioned monitoring requirements for the forthcoming ITRs for geophysical surveys in the GOM will exceed the authority granted to NMFS. In response to BOEM's November 7, 2014 "Request for Information on the Development of a Long-Term Monitoring Plan for Marine Mammals," which described an expansive monitoring plan for the GOM ITRs, the Associations submitted a letter detailing our objections to and concerns about the described plan. In our letter, among other things, we explained in detail that the MMPA does not authorize NMFS to require as a condition of a Letter of Authorization ("LOA") the preparation or development of a large-scale, expansive monitoring plan that reaches beyond the time and area in which site-specific activities are undertaken or the performance of actions related to such a plan. We reiterated this concern in a letter dated June 24, 2015, and in several meetings with Agency staff. The letters are attached for your reference.

In our efforts to assist the Agencies' work toward the final GOM ITRs, we have also previously provided proposed language that could be included in the documents developed during the process of preparing the ITRs. Those materials are attached again for your reference. Specifically, we have provided language that could be included in BOEM's petition to NMFS requesting the ITRs and in the Draft Programmatic Environmental Impact Statement that will evaluate the ITRs. In these materials, we have drawn a clear distinction between the type of monitoring that the Agencies may require as a condition of LOAs and other, broader research and monitoring efforts that cannot be required of LOA applicants under the MMPA.

Despite these concerns, we have also indicated that the Associations and their members are willing to work with the Agencies to identify, apart from any requirements in the ITRs, broader monitoring and data collection opportunities that facilitate a greater understanding of the potential effects of sounds produced by G&G activities on marine mammals in the northern GOM. In this light, we have developed the attached draft concept for an MP to initiate a mutually beneficial path forward.

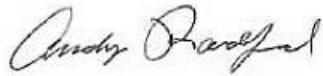
Consistent with the comments above and our prior communications with the Agencies, the attached MP concept paper describes a plan that distinguishes between two elements of monitoring: (1) site-specific monitoring and reporting for individual LOAs under the monitoring framework established in the ITRs, and (2) additional efforts not required as a condition for obtaining an LOA that may inform future ITRs or the terms included in LOAs under the forthcoming ITRs. The MP concept paper also presents a draft framework that would provide for the compilation, review, and adaptive integration of resultant data and information developed under each of those two elements, as well as development of goals, an annual MP review, and

Draft Monitoring Program Concept
September 2, 2016
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appropriate refinements through a collaborative adaptive management process between our members and the Agencies.

As always, the Associations look forward to productively working with the Agencies throughout the development of the GOM ITRs. In particular, we look forward to discussing the attached MP concept paper and potential path forward with the Agencies. We ask that you please contact the signatories below (Andy Radford, radforda@api.org or 202.682.8584) and Nikki Martin (nikki.martin@iagc.org or 713.957.5068) as soon as possible to schedule a meeting in the very near future to discuss the MP concept paper.

Sincerely,



Andy Radford
American Petroleum Institute
Sr. Policy Advisor - Offshore



Nikki Martin
International Association of Geophysical Contractors
President

Attachments

cc: Walter Cruickshank, Deputy Director, BOEM
Jennifer Bosyk, Division of Environmental Assessment, BOEM
Tamara Arzt, Division of Environmental Assessment, BOEM
Donna Wieting, Director, Office of Protected Resources, NMFS
Ben Laws, Office of Protected Resources, NMFS

ATTACHMENT F

Draft Concept for Gulf of Mexico G&G Monitoring Program

NMFS is expected to propose Incidental Take Regulations (ITRs) for geological and geophysical (G&G) surveys in the Gulf of Mexico (GoM) under the Marine Mammal Protection Act (MMPA), in response to a forthcoming petition for such ITRs from BOEM. In this context, the federal agencies and industry recognize the importance and value of both (i) monitoring and mitigation required of individual operators specific to the activity for which incidental take is authorized under a Letter of Authorization (LOA), and (ii) data collection, aggregation and analysis performed outside of the ITR framework. This document describes, for further discussion with NMFS and BOEM, a draft concept for a GoM G&G Monitoring Program (MP) that would establish a framework for managing both the data obtained through required monitoring from LOA holders and the information generated outside of the ITR framework, including the collection, aggregation, review, reporting, and use of data and information, as described below..

1. GoM G&G Monitoring

a. Monitoring and Reporting Under ITRs/LOAs

We expect the forthcoming ITRs to include monitoring and reporting requirements intended to require that each LOA holder: (1) provide information about the specific impacts of the incidental take authorized under a particular LOA and the related underlying activity, and (2) provide information that informs the assessment of the overall impact of the incidental take authorized under the regulations. These monitoring and reporting requirements, in and of themselves, would satisfy the statutory requirements applicable to the ITRs. The monitoring and reporting requirements included in each LOA may require, for example, the documentation of: (1) observations of the number of marine mammals potentially affected by the specified activity, including species identification, location observed, date and time of the observation, and, if possible, whether juvenile or adult, sex, and group size of the observed marine mammal(s); (2) behavioral reactions, if any, of the observed marine mammal(s) to the specified activity; and/or (3) other data that directly inform the question of whether, and if so, to what degree, marine mammal populations addressed in the regulations may be affected by the incidental take authorized by LOAs. We also expect that the ITRs will establish an adaptive management framework through which the monitoring requirements included in LOAs may be tailored based on the best available information and empirical learnings, consistent with the terms of the ITRs.

b. Efforts Beyond Monitoring and Reporting Under ITRs/LOAs

Beyond and separate from obligations under the MMPA, through a framework such as the one proposed below, additional efforts would identify, prioritize and manage any agreed upon additional data collection and analysis efforts. These efforts would not be included in the ITRs and would not be required as a condition for obtaining an LOA. Oil and gas operators and geophysical contractors would, as appropriate, help identify and participate in broader opportunities that would facilitate a greater understanding of how marine mammals in the GoM region may be affected by sounds from G&G activities. These opportunities could include relevant industry data collection and research, government

data collection, analysis, and research, and collaborative efforts among industry, the federal government and other parties. Data and information collected in efforts beyond required monitoring may include, but would not be limited to, marine mammal physiological and/or behavioral data, and data related to the basic distribution, abundance, and habitat use of marine mammal species.

2. Monitoring Program Framework

The MP would include a framework that addresses the two distinct monitoring elements described above. This framework would allow for the compilation, review, and adaptive integration of resultant data and information from these monitoring elements. The specific details of the MP framework, including reporting mechanisms, infrastructure needs and a process for ongoing coordination would be developed during initial MP start-up meetings between industry representatives and the responsible federal agencies (*i.e.*, BOEM, NMFS).

a. Reporting, Review, and Recommendations

In general, the MP framework would include mechanisms for the consideration of reports, aggregation, reviews, and other information and data generated by the regulated industry and responsible regulatory agencies. The MP framework would also establish an annual data and information exchange and discussion (Annual Review) between the regulated industry and responsible regulatory agencies on the following components:

- mandatory and standardized data reports provided by individual LOA holders under the ITRs;
- aggregation and analysis of those mandatory reports into an annual summary dataset of LOA-holder monitoring and mitigation; and,
- a review of other relevant activities undertaken by industry, the federal government, or other parties over the preceding year.¹

Collectively, these components would form the basis of an adaptive management plan for the succeeding year(s) that may result in changes to the LOA-holder monitoring and mitigation requirements (consistent with the ITRs) based on lessons learned from preceding years of monitoring in the GOM or in changes to the monitoring requirements of future ITRs. Additionally, the Annual Review would inform planning to address mutually identified high priority information gaps, data needs, or potential technological innovations through efforts outside the scope of the ITRs. Each Annual Review would enable the assessment of relative benefits and costs of monitoring and mitigation requirements previously placed upon individual LOA holders, allowing for future adjustments to LOA requirements consistent with the terms of existing ITRs or as reflected in changes to future ITRs.

Similar to the existing research and monitoring programs, public information, reports, adaptive management plans, etc. could be made available and archived on a dedicated website. Additionally,

¹ For example, the Sound and Marine Life Joint Industry Program (SAML JIP) regularly conducts multi-partner research and data collection, publicly reported on its website, www.soundandmarinelife.org, that is relevant to the mitigation of environmental risk in the GoM from industry activities.

appropriate items could be subject to an external or public review process. Any final products (*i.e.*, reports, adaptive management plans, etc.) should be made available for public review.

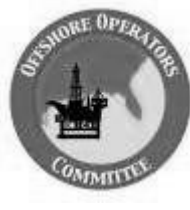
b. Goals and Metrics of Success

The MP would have clear and explicit monitoring goals identified by the regulated industry and regulatory agencies during the initial start-up meetings. The Annual Review would address success or failure in meeting those goals as part of the adaptive management planning process of the MP framework. This process is expected to increase confidence in regulatory decisions and reduce concerns about potential environmental risks. Also, as part of the Annual Review, a monitoring requirement may be evaluated and determined to be impracticable, not feasible with current scientific or technical capabilities, or of limited or no value to the regulatory process, thus freeing resources and effort for emergent questions or rising priorities.

Performance under the MP would depend on available resources and priorities that are affected by factors beyond the control of the regulatory agencies or regulated industry, including but not limited to fluctuations in federal budgets, the fiscal health of the regulated industry, and relevant contributions by other parties (*e.g.*, federal research programs like the National Science Foundation and Office of Naval Research; academic institutions; states; and other industries or GoM user groups, such as commercial fisheries, shipping, military, or other entities).

c. Further Planning and Considerations

Some of the activities considered under the MP would be beyond the means and capabilities of individual LOA holders. As such, to achieve the MP goals would require appropriate trade associations or similar industry-wide coordinating organizations to participate in the MP. These entities need to be identified during initial MP start-up meetings. Other specific MP framework details that need to be addressed include a timeline for industry reporting; data management structure for monitoring data, regulatory agency aggregation and analysis, external expert reviews, and mechanisms for implementing adaptive management decisions.



December 8, 2014

VIA email to monitoringplan@boem.gov

Bureau of Ocean Energy Management
Gulf of Mexico OCS Region & Atlantic Activities
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

Re: Comments on Request for Information on the Development of a Long Term Monitoring Plan for Marine Mammals in the Gulf of Mexico — BOEM-14-0075

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute (“API”), the Offshore Operators Committee (“OOC”) and the International Association of Geophysical Contractors (“IAGC”) (collectively, the “Associations”) in response to the Bureau of Ocean Energy Management’s (“BOEM”) Request for Information on the Development of a Long Term Monitoring Plan for Marine Mammals in the Gulf of Mexico (the “Request”). *See* 79 Fed. Reg. 66,402 (Nov. 7, 2014). We appreciate BOEM’s consideration of these comments.

The Associations have a strong interest in environmental monitoring, both to better understand the environment in which our members work, but also to mitigate risks to living marine resources. As set forth in more detail below, the Associations support efforts that improve the quantity and quality of information related to determining the nature and magnitude of the effects of offshore activities on marine mammals. Such information is essential for performing accurate incidental take analyses to support Marine Mammal Protection Act (“MMPA”) authorizations, for developing appropriate mitigation measures to minimize incidental take, and for correctly assessing the type and amount of incidental take that occurs in the course of operations. In this light, the Associations support industry’s ongoing and continued research related to determining and mitigating any potential effects of seismic surveys on marine

life in the Gulf of Mexico (“GOM”) and support agency efforts to improve the collection and use of information and use of best available science while also remaining consistent with the requirements and authority of the MMPA. We are not supportive of efforts that will impose requirements on the regulated community beyond the scope of the MMPA.

I. THE ASSOCIATIONS

API is a national trade association representing over 600 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

OOC is a non-profit organization comprised of any person, firm or corporation owning offshore leases and/or engaged in offshore activity as a drilling contractor, service company, supplier or other capacity that chooses to participate. Currently, OOC has 142 member companies. The Committee's activities are focused supporting its member companies in operations that protective of human health and the environment.

API, OOC, IAGC, and our members are longstanding supporters of the MMPA regulatory process as an effective means of balancing responsible offshore exploration activities with the conservation of marine mammals. In addition, as described in more detail below in § II.E, the oil and natural gas and geophysical exploration industries have made a considerable investment in research related to determining and mitigating the effects of seismic surveys on marine life.

II. COMMENTS

A. BOEM Is Not Required to Prepare a “Long Term Monitoring Plan”

As an initial matter, the Request states that BOEM’s contemplated long-term monitoring plan “is a required element of BOEM’s petition for rulemaking under the Marine Mammal Protection Act.” 79 Fed. Reg. at 66,402. However, this statement is demonstrably incorrect as there is no such requirement contained in the MMPA or in any other legal authority. In fact, every statutory and regulatory MMPA provision that refers to “monitoring” does so in the context of the “site-specific” monitoring plans that are required as a condition of incidental take authorizations issued pursuant to MMPA § 101(a)(5). None of those provisions refer to “long term” monitoring. For example, the MMPA regulations require a petition for an incidental take authorization to include, among other things:

The suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species, the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities and suggested means of minimizing burdens by coordinating such reporting requirements with other schemes already applicable to persons conducting such activity. Monitoring plans should include a description of the survey techniques that would be used to determine the movement and activity of marine mammals near the activity site(s) including migration and other habitat uses, such as feeding. Guidelines for developing a site-specific monitoring plan may be obtained by writing to the Director, Office of Protected Resources....

50 C.F.R. § 216.104(a)(13) (emphases added).

Consistent with the requirement to include a “site-specific” monitoring plan in a petition for an incidental take authorization, the MMPA simply requires incidental take regulations to include “requirements pertaining to the monitoring and reporting of such taking.” 16 U.S.C. § 1371(a)(5)(A)(i)(II)(bb) (emphasis added); *see also id.* § 1371(a)(5)(D)(ii)(II) (same description for incidental harassment authorization). The MMPA regulations similarly refer only to monitoring that is limited to the specific incidental take authorized by the agency in a particular authorization. *See* 50 C.F.R. § 216.102(c) (NMFS must prescribe requirements or conditions “pertaining to the monitoring and reporting of such taking”) (emphasis added); 50 C.F.R. § 216.105(b)(3) (referring to monitoring and reporting requirements “for each allowed activity”).¹

Additionally, the settlement agreement reached by the parties in *NRDC et al. v. Jewell et al.*, No. 2:10-cv-01882, Dkt. 118-2 (June 18, 2013, E.D. La.) (“GOM Settlement Agreement”) does not require BOEM to develop a long-term monitoring plan. In the GOM Settlement Agreement, the Federal Defendants simply agreed “to analyze in any EIS or EA for BOEM’s MMPA Application the development of a long-term adaptive monitoring plan that addresses potential cumulative and chronic impacts from seismic surveys on marine mammal populations in the Gulf of Mexico.” *Id.* § IX.B (emphasis added). In other words, BOEM did not agree to develop a plan, just to analyze the development of one. Moreover, as addressed above, the MMPA does not authorize (i) NMFS to require the development of a long-term monitoring plan as a condition of an incidental take authorization or (ii) BOEM to undertake development or implementation of a long-term monitoring plan as part of a MMPA § 101(a)(5) petition. The GOM Settlement Agreement does not and cannot legally authorize BOEM or NMFS to take actions that are not otherwise allowed by law. *See United States v. Carpenter*, 526 F.3d 1237,

¹ Indeed, in the nearly two-decade history of the issuance of incidental take authorizations in the Beaufort and Chukchi Seas, no federal agency has ever imposed an obligation to prepare a long-term monitoring plan or to take any action related to such a plan.

1241-42 (9th Cir. 2008) (terms in settlement agreement may not “violate the civil laws governing the agency”).²

In sum, there is no requirement for a petitioner under MMPA § 101(a)(5) (BOEM, in this instance) to prepare a long-term monitoring plan and there is no legal authorization for NMFS, as the agency authorizing incidental take, to require as a condition of an authorization the preparation or development of a long-term monitoring plan or the performance of actions related to a long-term monitoring plan. Accordingly, although the Associations support efforts to improve the quantity and quality of information related to determining the nature and magnitude of the effects of geophysical exploration activities on marine mammals and use this information to make informed decisions, we are not supportive of efforts that will impose requirements on the regulated community beyond the scope of the MMPA.

B. BOEM Should First Consider Extensive Existing Information

Notwithstanding our comments above, should BOEM pursue a long-term monitoring program for marine mammals in the GOM, it should first consider the large volume of data and information that has already been collected but remains unanalyzed due to the unavailability of sufficient resources. A complete assessment of these existing data sets should first be conducted to ensure that existing and relevant information is utilized to the fullest extent practicable.

For example, the current protected species observer program in the GOM provides BOEM and the Bureau of Safety and Environmental Enforcement (“BSEE”) with important information that could be used more meaningfully by the agencies to determine, among other things, species density and their occurrence during ramp-up, full operation, and when no sound source is active. The current program requires sighting reports for each marine mammal or sea turtle observed during operations and those reports must include information regarding species present, group size, direction in relation to the vessel, and behavior – and could be bolstered to collect other key data that would allow proper geospatial and sighting condition dependent analysis of observer effort and sightings.³ This data should also be more readily shared with stakeholders. Additionally, G&G permits issued since June 2013 must comply with the terms of the GOM Settlement Agreement, which imposes interim additional mitigation and monitoring measures, including the use of passive acoustic monitoring during periods of low visibility,

² This is consistent with the position of the Intervenor-Defendants in *NRDC v. Jewell*, who expressly stated that they “do not agree that all of the measures described in paragraph[s] IX.A and IX.B are feasible or appropriate.” See GOM Settlement Agreement § IX.D. Both API and IAGC are Intervenor-Defendants in the *NRDC v. Jewell* litigation. NMFS is not a party to the *NRDC v. Jewell* litigation.

³ All on-lease and off-lease geophysical and geological (“G&G”) surveys in the GOM must comply with the requirements of Joint Notice to Lessees No. 2012-G02 for Seismic Survey Mitigation Measures and Protected Species Observer Program. These mitigation measures include, among other things, ramp-up procedures, visual monitoring, shutdown for all marine mammals except dolphins within a 500-meter exclusion zone, and reporting requirements.

extended shutdown requirements for manatees, and the submittal of bi-weekly reports to BSEE. This required reporting is another source of valuable information that has not been fully utilized by the agencies.

The monitoring and reporting requirements that have been implemented over the years have generated a significant amount of information, but from the regulated community's perspective, that information does not appear to have been meaningfully analyzed, organized, or otherwise put to productive use by federal agencies. We suggest that an initial effort be made to understand the existing data and information — i.e., who is collecting it, why is it being collected, where is it being collected, where is it stored, and what is its content. It may also be useful to generate a visual representation showing specifically where the data are currently collected, including temporal, spatial and parameter elements, and use this map to identify gaps in monitoring. Such an effort could be followed by a meaningful analysis of how the currently collected data and information can be organized and used to inform future decisions.

C. Considerations for an Effective Monitoring Program

As stated above, the Associations support efforts to improve the quantity and quality of information related to determining the nature and magnitude of the effects of offshore activities on marine mammals so long as those efforts are consistent with applicable law. To the extent that BOEM plans to design a monitoring program that complies with the MMPA and will not impose unauthorized requirements on the regulated community, we offer the following considerations.

1. A monitoring program should establish clear and straightforward goals that help guide and bring focus to all efforts conducted as a part of the program. These could include the collection of basic, baseline distribution, abundance, and density information for GOM marine mammal species that are of most concern. A component of the program could also focus on the measurement of GOM ambient sound levels and anthropogenic sound.
2. A monitoring program should include an adaptive management component that is based upon the best available scientific information and assessment of relevant risks and is used to forecast emerging conditions for response and efficacy of mitigation measures industry applies.
3. A monitoring program should provide flexibility for adaptive technology and methodology, such as remote visual and passive acoustic monitoring, infrared technology, and active acoustics. The industry has worked with BOEM, NMFS, and BSEE for years in the GOM and other OCS regions, field testing different monitoring technologies and reporting their results.
4. A monitoring program should use updated reporting forms that capture substantive data from observations to substantiate the implementation of appropriate mitigation measures. For example, Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys*, recommends that agencies implement “standardization including data collection methods, standardized electronic forms, and software used in collaboration with

NMFS and non-federal stakeholders.” In comments submitted May 2, 2014, the Associations agreed with this recommendation and reaffirm it here.

Collaboration with NMFS should result in a reporting form that produces data the agency can use and rely upon to assess population numbers, stock assessments, and effects on marine species. The Associations also note that best practices implemented by industry already recommend the use of a standard reporting form developed under a project funded by the Exploration and Production (“E&P”) Sound and Marine Life Joint Industry Program.⁴ In addition, these reporting forms are recommended for use by the United Kingdom’s Joint Nature Conservation Committee (<http://jncc.defra.gov.uk/page-1534>). The Associations are sincerely interested in working with the agencies to update the current reporting forms.

5. Data generated from the monitoring program should be contributed to a publicly available database, such as OBIS-SEAMAP, so that the data are readily available to other government agencies, industry, researchers, and the public. Data and metadata should meet widely accepted standards.

6. Data analysis and synthesis must be a clear and explicit priority in a monitoring program. The plan for how, when, and to what purpose this data analysis will occur should be specifically stated and resources must be provided to support this analysis.

7. An effective monitoring program should be properly scoped to address relevant geographic areas and the activities within those areas. For example, because marine mammals are not restricted to just U.S. jurisdictional waters, BOEM should explore opportunities to partner with Mexico on monitoring projects. Additionally, a marine mammal monitoring program that focuses only on G&G activities, and does not account for other industries active in the GOM, would result in a piecemeal approach to long-term monitoring. Observed patterns in monitoring data can be explained by a number of factors that would not be accounted for in a monitoring plan focused solely on G&G activities.

8. BOEM should consider funding research to further the development of the “Population Consequences of Disturbance” framework, using the key data referred to above. *See* <http://www.smru.co.uk//pcod>, <http://www.onr.navy.mil/reports/FY11/mbfleish.pdf>.

⁴ *See* Barton, Carolyn J.S., Jaques, Robert, and Mason, Mike. 2008. Identification of Potential Utility of Collation of Existing Marine Mammal Observer Data. RSK Environmental Ltd., Cheshire, UK. The Marine Mammal Recording Form can be accessed at: <http://www.soundandmarinelife.org/research-categories/mitigation-and-monitoring/collection-and-analysis-of-existing-marine-mammal-observer-mmo-data.aspx>.

9. IAGC also recently provided suggested studies programs to BOEM, including marine mammal spatial density maps and research concerning the Bryde's whale (a baleen whale species that has been petitioned for listing under the Endangered Species Act).⁵

D. Any Effect of Seismic Surveys on Marine Mammals is Negligible

The best available scientific data and information demonstrate that the mitigation measures applied to offshore operations in the GOM is already more than adequate to protect marine mammals and sea turtles in a manner consistent with federal law. Insofar as we are aware, no seismic activities (in the GOM or anywhere else) have caused impacts amounting to anything more than temporary changes in behavior, without any known injury, mortality, or other adverse consequence to any marine mammal species or stocks. *See, e.g.*, the following sources:

- BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Eastern Planning Area Lease Sales 225 and 226*, at 2-22 (2013), <http://www.boem.gov/BOEM-2013-200-v1/> (“Within the CPA, which is directly adjacent to the EPA, there is a long-standing and well-developed OCS Program (more than 50 years); there are no data to suggest that activities from the preexisting OCS Program are significantly impacting marine mammal populations.”); *id.* at 2-23 (with respect to sea turtles, “no significant cumulative impacts to sea turtles would be expected as a result of the proposed exploration activities when added to the impacts of past, present, or reasonably foreseeable oil and gas development in the area, as well as other ongoing activities in the area”);
- BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Western Planning Area (WPA) Lease Sales 229, 233, 238, 246, and 248 and Central Planning Area (CPA) Lease Sales 227, 231, 235, 241, and 247*, at 4-203 (v.1) (2012), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v1.aspx (WPA); *id.* at 4-710 (v.2), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v2.aspx (CPA) (“Although there will always be some level of incomplete information on the effects from routine activities under a WPA proposed action on marine mammals, there is credible scientific information, applied using acceptable scientific methodologies, to support the conclusion that any realized impacts would be sublethal in nature and not in themselves rise to the level of reasonably foreseeable significant adverse (population-level) effects.”); *id.* at 4-235, 4-741 (“[T]here are no data to suggest that routine activities from the preexisting OCS Program are significantly impacting sea turtle populations.”);

⁵ Provided to BOEM via email dated November 6, 2014. Receipt acknowledged December 2, 2014.

- BOEM, *Final Supplemental EIS for Gulf of Mexico OCS Oil and Gas WPA Lease Sales 233 and CPA Lease Sale 231*, at 4-30, 4-130 (2013), http://www.boem.gov/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2013/BOEM%202013-0118.pdf (reiterating conclusions noted above); MMS, *Final Programmatic EA, G&G Exploration on Gulf of Mexico OCS*, at III-9, II-14 (2004), http://www.nmfs.noaa.gov/pr/pdfs/permits/mms_pea2004.pdf (“There have been no documented instances of deaths, physical injuries, or auditory (physiological) effects on marine mammals from seismic surveys.”); *id.* at III-23 (“At this point, there is no evidence that adverse behavioral impacts at the local population level are occurring in the GOM.”);
- MMS, *Draft Programmatic EIS for OCS Oil & Gas Leasing Program, 2007-2012*, at V-64 (Apr. 2007) (citing 2005 NRC Report), <http://www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Five-Year-Program/5and6-ConsultationPreparers-pdf.aspx> (MMS agreed with the National Academy of Sciences’ National Research Council that “there are no documented or known population-level effects due to sound,” and “there have been no known instances of injury, mortality, or population level effects on marine mammals from seismic exposure ”);
- A. Jochens et al., *Sperm Whale Seismic Study in the Gulf of Mexico: Synthesis Report*, at 12 (2008) (“There appeared to be no horizontal avoidance to controlled exposure of seismic airgun sounds by sperm whales in the main SWSS study area.”);
- *Takes of Marine Mammals Incidental to Specified Activities; Low-Energy Marine Geophysical Survey in the Gulf of Mexico, April to May, 2013*, 78 Fed. Reg. 11,821, 11,827, 11,830 (Feb. 20, 2013) (“[I]t is unlikely that the proposed project [a USGS seismic project] would result in any cases of temporary or permanent hearing impairment, or any significant non-auditory physical or physiological effects”; “The history of coexistence between seismic surveys and baleen whales suggests that brief exposures to sound pulses from any single seismic survey are unlikely to result in prolonged effects.”);
- *Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, May to August 2014*, 79 Fed. Reg. 14,779, 14,789 (Mar. 17, 2014) (“There has been no specific documentation of temporary threshold shift let alone permanent hearing damage[] (i.e., permanent threshold shift) in free ranging marine mammals exposed to sequences of airgun pulses during realistic field conditions.”);
- *Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Seismic Survey in Cook Inlet, Alaska*, 79 Fed. Reg. 12,160, 12,166 (Mar. 4, 2014) (“To date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to air gun pulses, even in the case of large air gun arrays.”).

E. Other Research Efforts and Collaboration Opportunities

For many years, the oil and gas and geophysical exploration industries have made a considerable investment in research related to determining and mitigating the effects of seismic surveys on marine life. That investment continues today. In 2006, a group of international oil and gas companies and the geophysical industry committed to uniting their resources to fund a research program to improve understanding of the potential physical and behavioral effects on marine life from the sound created during the process of finding and producing oil and gas. The E&P Sound and Marine Life Joint Industry Program (“JIP”) is the most extensive industry research program in this field.

The JIP supports research to increase understanding of the effects of sound on marine life generated by oil and gas exploration and production activity and to remove some of the uncertainty about the possible effects of seismic surveys. The research also helps governments make regulatory decisions based on the best science and helps the regulated community develop effective mitigation strategies. The JIP’s research is divided into five categories — from understanding how sound travels in water, to the possible effects of sound on the physical and behavioral well-being of marine life, as well as new technologies and methodologies that might further mitigate hypothetical but as yet poorly understood sources of risk. More information on the JIP is available at www.soundandmarinelife.org.

The JIP has also researched and developed a range of research tools that are used to assist the understanding of the behavior of marine mammals in their environment. These tools include, but are not limited to, animal tracking tags, improved passive acoustic detection, classification and tracking tools, and methodologies for assessing and monitoring subtle behavioral and physiological responses to manmade sound. These techniques have not just helped the JIP in its studies, but have also advanced general scientific knowledge of marine animals. The JIP has also developed PAMGuard, which is software designed to facilitate passive acoustic monitoring of marine mammals at sea in poor-visibility conditions. The Associations strongly encourage BOEM to coordinate its monitoring efforts with the efforts of the JIP.

In addition to the JIP, the following sources contain programs or information that may be helpful to BOEM’s GOM monitoring efforts:

- *National Academy of Sciences Gulf Research Program*, <http://nationalacademies.org/gulf/index.html>.
- *National Oceanographic Partnership Program*, www.nopp.org.
- *NOAA RESTORE Act Science Program*, <http://restoreactscienceprogram.noaa.gov/>
- *National Fish and Wildlife Foundation Gulf Environmental Benefit Fund*, <http://www.nfwf.org/gulf/Pages/home.aspx>

- *US Navy Living Marine Resources (LMR) Program*, <http://www.lmr.navy.mil/Home.aspx>
- *Integrated Ocean Observing System / GOM Coastal Observing System*, <http://gcoos.org/>
- *Cetacean & Sound Mapping (CetSound)*, <http://cetsound.noaa.gov>

III. CONCLUSION

In addition to industry's continued research to understand and mitigate the potential effects of industry activities on marine life in the GOM, the Associations support agency efforts to improve the collection and use of information in support of monitoring and reporting efforts in the GOM within the scope of the MMPA. We appreciate BOEM's consideration of the recommendations set forth above and we strongly encourage the agency to continue to reach out to, and coordinate with, the regulated community should it proceed with the development of a GOM monitoring program.

Should you have any questions, please contact the undersigned at 202.682.8584, or via e-mail at radforda@api.org.

Sincerely,



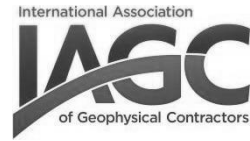
Andy Radford
American Petroleum Institute



Karen St. John
International Association of Geophysical Contractors



Evan Zimmerman
Offshore Operators Committee



June 24, 2015

By Electronic Mail and U.S. First Class Mail

Dr. Walter Cruickshank
Deputy Director
Bureau of Ocean Energy Management
1849 C Street NW
Room 5211
Washington, DC 20240

Samuel D. Rauch, III
Deputy Assistant Administrator for Regulatory Programs
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, Maryland 20910

Dear Sirs:

The American Petroleum Institute (“API”) and the International Association of Geophysical Contractors (“IAGC”) submit this letter as part of our ongoing engagement with the Bureau of Ocean Energy Management (“BOEM”) and the National Marine Fisheries Service (“NMFS”) regarding geological and geophysical (“G&G”) exploration in the Gulf of Mexico (“GOM”). G&G exploration is vitally important to our members and to our nation’s energy needs, and we hope that API and IAGC can continue to serve as valuable partners with BOEM regarding your efforts on this issue.

In particular, we hope to have a productive discussion with you about the petition for an incidental take regulation (“ITR”) addressing the incidental take of marine mammals in the GOM under the Marine Mammals Protection Act (“MMPA”) that BOEM has submitted to the National Marine Fisheries Service (“NMFS”).

I. BOEM’s Petition for Incidental Take Regulation

As you know, BOEM’s predecessor agency submitted a petition to NMFS in 2002 for the issuance of an ITR addressing the incidental take of marine mammals in the GOM.¹ In 2011, BOEM submitted a revised ITR petition to NMFS, for which NMFS accepted public comments.² The 2011 petition requested an ITR covering a five-year period and authorizing the incidental

¹ See 68 Fed. Reg. 9991 (Mar. 3, 2003).

² 76 Fed. Reg. 34,656 (June 14, 2011).

take of 21 species of cetaceans incidental to seismic surveys undertaken for G&G exploration in the GOM.

We recognize that BOEM is now re-amending its petition. We also know that that BOEM published a Request for Information (“RFI”) last November regarding a potential long-term monitoring plan (“LTMP”) “on the potential impacts to marine mammals from [G&G] data acquisition activities, including seismic surveys,” which stated that an LTMP “is a required element of BOEM’s petition for a rulemaking under the [MMPA].”³ In addition, we participated in the webinar for industry stakeholders that BOEM held in March 2015 on this issue.

II. Overview of Comments from December 8, 2014 Letter

API and IAGC, with the Offshore Operators Committee, submitted a letter to BOEM on December 8, 2014, commenting on the November 2014 RFI. While API and IAGC support BOEM’s efforts in principle, we have significant concerns about BOEM’s apparent intention to include an LTMP in its amended petition.

In our December 8 letter, we strongly contested BOEM’s assertion in the RFI that the petition must include an LTMP. As we explained, the MMPA includes no such requirement; to the contrary, every statutory and regulatory reference to monitoring refers to “site-specific” monitoring plans, not long-term monitoring. We also noted that the settlement agreement in *NRDC v. Jewell*⁴ regarding seismic surveying in the GOM does not require BOEM to develop an LTMP. Finally, we explained that there is no legal authority for NMFS to require an LTMP as a condition for authorizing incidental take.

We also provided comments for BOEM to consider in developing a LTMP concept, should BOEM move forward with one. As we explained in significantly greater detail in the letter, in any action to develop an LTMP, BOEM should:

- Assess the voluminous existing and relevant information;
- Establish clear and straightforward goals;
- Include an adaptive management component;
- Provide flexibility for adaptive technology and methodology;
- Use updated reporting forms;
- Contribute generated data to a publicly available database;
- Prioritize data analysis and synthesis;
- Properly scope the program;
- Consider funding research to further the development of the “Population Consequences of Disturbance” framework; and
- Take into account studies programs that IAGC has recommended.

³ 79 Fed. Reg. 66,402 (Nov. 7, 2014).

⁴ Case No. 2:10-cv-01882 (E.D. La.).

Our letter also explained that the best available scientific data and information demonstrate that any effect of G&G activities on marine mammals is negligible, in particular because of the effectiveness of mitigation measures already applied to offshore operations in the GOM. Finally, our letter summarized the many research efforts that our industries have made, and continue to make, with respect to determining and mitigating the effects of seismic surveys on marine life.

III. Requests

API, IAGC, and our respective members are committed to environmental protection and ensuring that G&G exploration is carried out in a responsible manner. Industry's long-standing and ongoing research into these issues reflects those interests. We do not, however, support ineffective, unproductive, or unreasonable requirements, and we have concerns that the contemplated LTMP would include these types of requirement.

In our December 8 letter, we strongly encouraged BOEM to continue its outreach to, and coordination with, the regulated community should it proceed with any marine mammal monitoring program. To BOEM's credit, a series of stakeholder webinars were held in March 2015. During the March webinar, BOEM had stated that they planned to include the monitoring plan in the petition based on assertion from NMFS that such a plan was required. Upon further inquiry during the webinar, NMFS stated that they would provide an explanation of those requirements for the monitoring plan in writing and have since reiterated that commitment (in a call with both associations on June 8). We have not received any follow-up and to that end, by this letter we respectfully request that NMFS provide the promised justification as soon as possible.

In addition, BOEM has stated on number of instances its intention to provide API and IAGC a draft copy of the proposed monitoring plan for review prior to inclusion in the revised petition. We respectfully request that the draft be provided as soon as possible so that industry can have ample time to review and discuss any concern we might have with BOEM.

We appreciate the ongoing cooperation and access to the BOEM and NMFS staffs as we work through the rulemaking process. Should you have any questions, please contact Andy Radford (radforda@api.org, 202-682-8584) or Nikki Martin (nikki.martin@iagc.org, 713-957-5068).

Sincerely,



Andy Radford
American Petroleum Institute



Nikki Martin
International Association of Geophysical Contractors

Proposed Monitoring Language for GOM ITR Petition

The MMPA requires incidental take regulations issued under Section 101(a)(5)(A) to set forth requirements pertaining to the monitoring and reporting of the incidental take authorized under the regulations. The authorization of incidental take occurs through letters of authorization (“LOAs”) issued to specific operators for certain activities. Accordingly, monitoring and reporting of authorized take under the Section 101(a)(5)(A) regulatory framework is accomplished through the imposition of specific requirements identified in LOAs issued to individual operators. These monitoring and reporting requirements are intended to (1) provide information about the specific impacts of the incidental take authorized under a particular LOA and the related underlying activity, and (2) inform the assessment of the overall impact of the incidental take authorized under the regulations.

Each LOA issued under the regulations will include a requirement to monitor and report on marine mammals and any observable reactions they may have to exploration activities. The monitoring and reporting requirements included in each LOA will generally require the documentation of the following information: (1) observations of the number of animals encountered by the exploration activity covered by the LOA, including species identification, location observed, date and time of the observation, and, if possible, whether juvenile or adult, sex, and group size of the observed marine mammal(s); (2) behavioral reactions, if any, of the observed marine mammal(s) to the exploration activity covered by the LOA; and (3) other data that directly inform the question of whether, and if so, to what degree, marine mammals addressed in the regulations are affected by the incidental take authorized by LOAs issued under the regulations. All of the information collected under the terms of LOAs will be reported to the appropriate agencies on a specific schedule to be determined by BOEM and NMFS.

Although a suite of monitoring and reporting measures will be set forth in the incidental take regulations, each LOA issued under the regulations may be tailored to address the specific facts and circumstances of the specific action. LOA applicants will be expected to include details of the specific monitoring and reporting requirements in Marine Mammal Monitoring Plans, and NMFS will coordinate with the applicant to ensure its monitoring and reporting efforts meet applicable standards. *See, e.g.*, 50 C.F.R. § 216.104(a)(13). The goal is to ensure that there is sufficient flexibility built into the regulations to allow NMFS and each applicant to construct an effective monitoring and reporting plan that meets the requirements of the MMPA. For example, if multiple LOA applicants propose concurrent seismic surveys, NMFS will work with the applicants to identify efficient and effective monitoring strategies.

In addition to the monitoring and reporting requirements that will be implemented through the issuance of individual LOAs under the regulations (as described above), BOEM recognizes that it would be useful to collect additional data that address specific science questions that do not directly relate to the potential impacts of the incidental take authorized by LOAs or are not otherwise collected under the terms of LOAs. Such additional data generally include, but are not limited to, marine mammal stock information, marine mammal physiological data, and data related to the basic distribution and habitat use of marine mammal species. While this type of information, and the means of acquiring such information, will not be mandated by the incidental take regulations, industry, BOEM, and NMFS will discuss appropriate additional

scientific monitoring efforts that could be undertaken at the election of LOA applicants. A substantial body of scientific data has been collected by BOEM, academic and other research institutes, and industry from this and other regions over the years, which has helped to inform this rulemaking and any additional steps that are needed to better understand how marine mammals react to anthropogenic sound in the marine environment. For example, these studies have gathered information relevant to sound source characterization and sound propagation, physical and physiological effects, behavioral reactions and biological significant effects, mitigation and monitoring procedures and tools, deep-sea marine animals (SERPENT), sperm whales (BOEM-funded SWSS and SWAPS), other cetaceans and sea turtles (BOEM-funded GULFCET), and the development of transfer functions for the Population Consequences of Acoustic Disturbance Model (PCOD). The goal of any private industry/federal partnership formed to acquire such additional data will be to assess the value of past and existing research and monitoring efforts, avoid redundant studies going forward, and focus on those studies that provide high quality and useful data to inform future decisions.

Finally, the development of the monitoring and reporting requirements that are implemented through the incidental take regulations and LOAs should follow principles of adaptive management through which the requirements included in new LOAs may be modified based on the acquisition of additional information. Accordingly, the identification of additional information, and the methods through which that information is voluntarily acquired, will also be subject to an adaptive process that is informed by new data and information, other research efforts, and input from the scientific and regulated communities. All monitoring and research—whether accomplished through LOA requirements or voluntary efforts—should be based on the best available scientific information, incorporate information generated from past research and monitoring efforts, and be coordinated with other relevant research efforts.

Proposed Language Addressing Adaptive Management for GOM ITR Petition

BOEM recognizes there is significant value in developing and executing a flexible, scalable, and adaptable GoM G&G mitigation and monitoring program. This program should be designed in a manner that accounts for the likely differences among the various G&G activities covered by the regulations (*e.g.*, the technical characteristics of individual projects, their location, time of year, species likely to be present, etc.), while also satisfying the requirements of the MMPA, NEPA, and other applicable law.

The requested incidental take regulations will identify specific measures that may be necessary to mitigate and monitor the anticipated effects of the incidental take authorized through LOAs. The measures will be based upon the best available science and reasonably identifiable as potential means of mitigating and monitoring marine mammal impacts. During the LOA application process, each applicant will, as appropriate, determine whether one or more of the mitigation and monitoring measures identified in the regulations should be included in its LOA application. NMFS will include in each LOA only those measures that are practicable and necessary to accomplish the mitigation and monitoring goals specified in the regulations.

In some instances, there may be a need to include mitigation and monitoring measures in an LOA that are in lieu of, or in addition to, the measures specifically identified in the incidental take regulations. Sufficient flexibility must be built into the regulatory process to allow individual applicants and NMFS to identify any such additional measures. This flexibility is necessary to allow for the inclusion of additional measures that cannot reasonably be identified and assessed when the regulations are issued but that can reasonably be identified and assessed at the time an LOA application is submitted, based on the activity-specific information provided in the LOA application.

Accordingly, BOEM recommends that the incidental take regulations describe: (1) the process for identifying and including appropriate mitigation and monitoring measures from those identified in the regulations in specific LOAs; (2) the process for identifying and including appropriate mitigation and monitoring measures in specific LOAs that are in lieu of, or in addition to, the mitigation and monitoring measures identified in the regulations; (2a) the potential effects from the specified activity for which any such additional measures may be needed; (2b) if feasible, general non-exclusive examples of such additional measures; (2c) the reasons why the additional measures cannot be specifically identified in the regulations; and (3) how NMFS will assess the practicability (*e.g.*, cost, safety, feasibility, benefits) of the mitigation and monitoring measures included in LOAs.

Ultimately, the process for identifying the mitigation and monitoring measures that may be necessary in LOAs should (1) allow G&G seismic operators to execute individual G&G surveys in a reasonable, timely, and cost-effective manner; (2) allow NMFS to tailor mitigation and monitoring measures to the specific location and circumstances associated with individual LOAs; and (3) be supported by information sufficient to complete the required regulatory reviews and associated findings under the Marine Mammal Protection Act, the National Environmental Policy Act, and the Endangered Species Act.

A plan to monitor the potential impacts of G&G activities on marine mammals is being developed with BOEM's petition to NMFS requesting the issuance of ITRs for G&G activities in the Gulf. Monitoring activities would be implemented for the life of the rule and will monitor how and to what extent G&G activities may affect marine mammals in the Gulf of Mexico. The monitoring and reporting methods identified in the monitoring plan measures implemented through the rule and the letters of authorization (LOAs) issued under the rule will allow for an "increased knowledge of the species, the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities and suggested means of minimizing burdens by coordinating such reporting requirements with other schemes already applicable to persons conducting such activity" 50 CFR 216.104(a)(13).

Monitoring activities will include the standard monitoring and reporting measures currently required of regulated industry in the GOM (see **Chapter 2** and **Appendix B**). Although the full suite of these standard monitoring and reporting measures will be set forth in the rule, each LOA issued under the rule may be tailored to address the specific facts and circumstances of the specific action. The monitoring and reporting requirements included in each LOA will generally require the documentation of the following information: (1) observations of the number of animals encountered by the exploration activity covered by the LOA, including species identification, location observed, date and time of the observation, and, if possible, the age, size, sex, and group size of the observed marine mammal(s); (2) behavioral reactions, if any, of the observed marine mammal(s) to the exploration activity covered by the LOA; and (3) other data that directly inform the question of whether, and if so, to what degree, marine mammals addressed in the rule are affected by the incidental take authorized by LOAs issued under the rule. All of the information collected under the terms of LOAs will be reported to the appropriate agencies on a specific schedule to be determined by BOEM and NMFS. LOA applicants will be expected to include details of the specific monitoring and reporting requirements in Marine Mammal Monitoring Plans, and NMFS will coordinate with the applicant to ensure its monitoring and reporting efforts meet applicable standards. See, e.g., 50 C.F.R. § 216.104(a)(13). Additional monitoring activities may include visual or acoustic observation of animals, new or ongoing research and data analysis, in-situ measurements of sound sources or other potential impact producing factors, or any other number of activities aimed at understanding the coincidence of marine mammals and G&G activities in space and time as well as the impacts that may occur from this overlap.

The monitoring plan program implemented through the rule may be adaptively managed through a process of design, implementation, periodic evaluation, and revision as needed. Any modifications to the monitoring plan through this adaptive process will be made available to the public. Through this adaptive process, the requirements included in LOAs may be modified based on the acquisition of additional information. In addition to the public comment process associated with this Draft PEIS, opportunity for public input on the monitoring plan would occur through any process that NMFS undertakes in response to BOEM's petition for rulemaking under the MMPA. For example, in some instances, there may be a need to include mitigation and monitoring measures in an LOA that are in lieu of, or in addition to, the measures specifically identified in the rule. Sufficient flexibility will be built into the regulatory process to identify any such additional measures. This flexibility is necessary to allow for the inclusion of additional measures that cannot reasonably be identified and assessed when the rule is issued but that can reasonably be identified and assessed at the time an LOA application is submitted, based on the activity-specific information provided in the LOA application. The process for identifying any such additional measures will be specifically set forth in the rule, and will be subject to public review and comment through both the MMPA rulemaking process and the NEPA process.

The development of the monitoring plan is ongoing. BOEM and NMFS are working collaboratively with the anticipated regulated parties to identify specific monitoring questions and activities that may be implemented during the period for which a rule would be issued. BOEM understands the importance of early and substantive public input in our environmental review processes. In early 2015, BOEM put out a request for information to seek input on the development of the monitoring plan (79 FR 66402) and held a series of webinars to solicit recommendations for monitoring goals and activities for marine mammals in the Gulf of Mexico. This process identified ongoing and planned activities in the GOM that may serve to inform, among other things, monitoring needs the monitoring and reporting requirements implemented through rule. ~~BOEM continues to coordinate with both industry and external stakeholders to understand how a marine mammal monitoring plan in the GOM for G&G activities may fit into other efforts in order to prevent duplication and address monitoring needs in the context of the larger Gulf ecosystem.~~

The specific details of the monitoring plan are not essential to make a reasoned choice among the alternatives in this Draft PEIS. Monitoring will be required regardless of the alternative chosen. Any impacts resulting from monitoring activities are expected to result in negligible or beneficial impacts to marine mammal species subject to the monitoring activities and are not expected to modify the impact conclusions in this document. Monitoring could be used adaptively to inform the suite of mitigation measures employed, resulting in similar or reduced levels of impacts to the species evaluated in this Draft PEIS. The specifics of the monitoring plan will be available prior to the issuance of any ITRs and the publication of the Final PEIS.

DRAFT, PRE-DECISIONAL. DO NOT DISTRIBUTE.

Page 1 of 1

To: Macgregor, Katharine[katharine_macgregor@ios.doi.gov]
Cc: Devito, Vincent[vincent_devito@ios.doi.gov]; Tom Lillie (Thomas.Lillie@bsee.gov)[Thomas.Lillie@bsee.gov]; Doug Morris (douglas.morris@bsee.gov)[douglas.morris@bsee.gov]; Lars Herbst (lars.herbst@bsee.gov)[lars.herbst@bsee.gov]; Malstrom, Kirk[Kirk.Malstrom@bsee.gov]; Jim Cason[James_Cason@ios.doi.gov]; Daniel Jorjani[daniel_jorjani@ios.doi.gov]
From: Holly Hopkins
Sent: 2017-05-17T14:42:54-04:00
Importance: Normal
Subject: RE: Secretarial Order 3350 & Blowout Preventer Systems and Well Control
Received: 2017-05-17T14:44:15-04:00
[170516 - FINAL - Zinke Letter - Sec Order 3350.pdf](#)
[150522 Final API Ltr BSEE-BOEM Arctic Rules Package.pdf](#)
[160620 Joint Trades Comments - Air Quality Control Reporting and Compliance - Docket ID BOEM-2013-0081.pdf](#)
[161129 - GOM PDEIS - Final Draft Comment Letter - API-IAGC-NOIA-OOC.pdf](#)

In addition to the letter sent this morning by the Joint Trades on the WCR. API sent the attached letter to Secretary Zinke today to cover all the items in the Secretarial Order. I thought you might be interested. Please let us know if you have any questions or would like to discuss further. Thanks.

From: Holly Hopkins
Sent: Wednesday, May 17, 2017 10:21 AM
To: Macgregor, Katharine
Cc: 'Devito, Vincent'; Tom Lillie (Thomas.Lillie@bsee.gov); Doug Morris (douglas.morris@bsee.gov); Lars Herbst (lars.herbst@bsee.gov); Malstrom, Kirk; Jim Cason; Daniel Jorjani
Subject: RE: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Some of you may have already noticed, Vincent's email address was incorrect below. My apologies and corrected above. Thank you again

From: Holly Hopkins
Sent: Wednesday, May 17, 2017 7:51 AM
To: Macgregor, Katharine
Cc: Vincent DeVito (vincent_devito@ios.dio.gov); Tom Lillie (Thomas.Lillie@bsee.gov); Doug Morris (douglas.morris@bsee.gov); Lars Herbst (lars.herbst@bsee.gov); Malstrom, Kirk; Jim Cason; Daniel Jorjani
Subject: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Kate,

API, IADC, IPAA, NOIA, OOC, PESA, and the US Oil and Gas Association are pleased to provide detailed information on the final Blowout Preventer Systems and Well Control rule to inform the regulatory and policy review directed by Secretarial Order 3350 and to offer any needed assistance to you as DOI continues to implement the Order.

The Final Well Control Rule is greatly improved from the proposed rule, but numerous concerns still remain. Industry has outlined our concerns in detail in the attached table but wish to highlight four major concerns, in no particular order. Industry remains concerned with the drilling margin requirements in the final well control rule and suggests deleting the new regulatory text and reverting to the previous requirements. That risk-based approach to managing drilling margin in

combination with existing regulatory oversight has been demonstrated to safely and economically drill wells. The requirements that exceed the provisions of API Standard 53 (API 53), Blowout Prevention Equipment Systems for Drilling Wells are unnecessary, will not improve safety and will increase risks to operations, which is why, we recommend using the requirements in API 53 as the primary best practice. Rulemaking on RTM is premature, we suggest deleting those requirements. And finally, Industry does not see the need for BSEE to require certification by BSEE-approved verification organizations (BAVOs). Certification can be done by third party organizations; they do not need to be approved by BSEE.

Safety is a core value for the oil and natural gas industry. We are committed to safe operations and support effective regulations in the area of blowout preventer systems and well control. We appreciate the actions of this Administration to eliminate unnecessary burden and to restore certainty and predictability into the offshore permitting and regulatory regimes. We look forward to continued engagement with the Department and you on these important regulatory requirements to assure that the energy that is fundamental to our society can be developed and delivered safely.

Thank you for your consideration of these comments, please do not hesitate to contact us if you have any questions or would like to meet for further discussion.

Thanks,

Holly A. Hopkins
Sr. Policy Advisor, Upstream
American Petroleum Institute
1220 L Street, NW
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hopkinsh@api.org



This transmission contains information that is privileged and confidential and is intended solely for use of the individual(s) listed above. If you received the communication in error, please notify me immediately. Any dissemination or copying of this communication by anyone other than the individual(s) listed above is prohibited.



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www.api.org

May 27, 2015

BSEE
Attention: Regulations and Standards Branch
45600 Woodland Road
Sterling, Virginia 20166

Re: [Docket ID: BSEE-2013-0011]

Bureau of Safety and Environmental Enforcement, 30 CFR Parts 250 and 254; Bureau of Ocean Energy Management, 30 CFR Part 550

Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf, RIN: 1082-AA00

To the Regulations and Standards Branch:

The Bureau of Safety and Environmental Enforcement (BSEE) and the Bureau of Ocean Energy Management (BOEM) jointly published proposed new requirements to regulations for exploratory drilling and related operations on the Outer Continental Shelf (OCS) seaward of the State of Alaska (Alaska OCS). The proposed regulations were published in the Federal Register February 24, 2015 at 80 FR 9915 (Volume 80, Number 36, Pages 9915–9971) .

With this letter, API provides its comments to this rulemaking. API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API's members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while safely and economically developing and supplying energy resources for consumers. API members have significant interest in ensuring that there are future opportunities for offshore oil and natural gas exploration and development in the United States ("U.S.") so that the nation can capitalize on industry expertise that has been garnered through years of successful and beneficial exploration, development and production of domestic OCS oil and natural gas resources, including the resources that are believed likely to be found in the Alaska OCS. API members are engaged in exploration and production for crude oil and natural gas in the OCS portions of the Beaufort and Chukchi Seas, and hold leases issued by BOEM in these areas.

1. Overview

API's comments set forth in this letter describe approaches that we believe would best assure orderly, safe and environmentally responsible development of energy resources in the Alaska OCS for our nation's economic and energy security, and for the benefit of the people of the north and the United States as a whole. Our comments are informed by the long experience of our industry with exploration, development and production operations in the Arctic, and by – among other analyses of that experience – the report,

Arctic Potential: Realizing the Promise of U.S. Arctic Oil and Gas Resources, released by the National Petroleum Council March 27, 2015 (NPC Arctic Report). The NPC Arctic Report was commissioned by the request of the Secretary of Energy, Ernest J. Moniz, to the NPC October 23, 2014, and is a comprehensive multi-stakeholder study that considers the research and technology opportunities to enable prudent development of U.S. Arctic oil and gas resources.

2. Access to Oil and Gas Resources in the Alaska OCS under Balanced and Science-Based Regulations Is Essential to the Nation's Economy and Energy Security

As acknowledged in the NPC Arctic Report, the Alaska OCS, including the Chukchi and Beaufort Seas off Alaska, is highly prospective for discovery of new world class hydrocarbon resources. Development of new oil and gas resources is a critical state and national interest. The offshore oil potential of the Alaska OCS is similar to Russia and larger than that of Canada and Norway. The Alaska OCS is estimated to have 48 BBOE of offshore undiscovered conventional resource potential, with over 90% of this in less than 100 meters of water. Furthermore, the Chukchi and Beaufort Sea OCS combined represent over 80% of the total U.S. Arctic offshore conventional potential. The Chukchi Sea offers more potential resources than any other undeveloped U.S. energy basin. The Beaufort Sea also provides among the largest potential undiscovered resource accumulations in the U.S. Together, the oil and natural gas resource potential represented by the Chukchi and Beaufort Seas exceeds the combined resource estimates for the Atlantic and Pacific OCS.

The search for energy resources in the Arctic is not new. The long record of our industry's exploration and production operations in the region demonstrates that exploration and development of oil and natural gas resources in the Alaska OCS can take place in a safe and environmentally responsible manner; can enable the protection of habitat, wildlife, and subsistence resources; and is respectful of the way of life and the communities of the people living in the region. This long record includes exploration, development, production, and transport, and has resulted from continuous technology advances and learnings from experience. Approximately 440 exploration wells have been drilled in Arctic waters overall, including 35 in the Alaska OCS.

America's Alaska OCS can make an important contribution to sustaining our nation's overall crude oil supplies at a time in the future when Lower 48 production – now flourishing due to industry's development of technologies to extract oil and natural gas from shale, tight sandstone and other formations previously thought to be non-economic – is projected to be in decline. As discussed in depth in the NPC Arctic Report, most of the U.S. Arctic offshore oil and gas potential can be developed safely using existing field-proven technology. It is critical that regulation of operations on the Arctic OCS recognize the importance of the resource potential at stake, the record of the operating experience that demonstrates that these resources can be developed in a way that does not harm the Arctic environment nor prevent subsistence, and other uses of that environment. Given the resource potential and long timelines required to bring Arctic resources to market, Arctic exploration today may provide a material impact to U.S. oil production in the future, potentially averting decline, improving U.S. energy security, and benefitting the regional and overall U.S. economy.

Studies show that development of the Alaska OCS would increase economic activity and jobs. Northern Economics in association with the University of Alaska-Anchorage assessed that OCS development would add approximately \$145 billion in new payroll for U.S. workers and \$193 billion or more in new local, state, and federal government revenue combined over 50 years.¹ The projected net revenues to the state of Alaska

¹ *Economic Analysis of Future Offshore Oil and Gas Development: Beaufort Sea, Chukchi Sea, and North Aleutian Basin*, by Northern Economics in association with the Institute of Social and Economic Research at the University of Alaska-Anchorage. Feb. 2011. The study notes that “[t]he scenarios used were based in part on the scenarios discussed by the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) in published Environmental Impact Statements (EIS) and other materials. . . . The recent Draft Environmental Impact Statement for the *Beaufort and Chukchi Sea Planning Areas, Oil and Gas Lease Sales 209, 212, 217, and 221* was issued after the analysis for this report was completed. The scenarios used in this report are based on earlier scenarios and other material that are broader in scope and duration than the November 2008 draft EIS.”)

from OCS development could be about \$6.6 billion (2007\$). Today oil and gas development is one third of the state of Alaska's economic activity and provides about 90% of the state's general revenue. The North Slope Borough oil and gas property taxes have exceeded \$180 million annually since 2000, representing about 60% of their annual operating budget. One-third of Alaska's jobs—127,000—are oil-related and depend on oil production.

The economic assessment put forward in the proposed rules significantly and systematically underestimates the potential impact to industry which is likely to challenge the economics of potential large scale investments. The assessed ~\$1 billion cost to industry over the 10 year assessment period fails to address the impacts of shortening the effective drilling season (driven primarily by a same-season relief well requirement) and utilizes assumed spreadrates for drilling and emergency response facilities that are far lower than demonstrated by industry experience. Across the board, the agencies' estimated costs are drastically low, sometimes by several orders of magnitude. After adjusting the proposed economic assessment on these two factors noted above alone, the estimated cost to industry is estimated at \$10 - 20 billion, and could potentially be higher. Such a cost burden would establish economic barriers that would profoundly reduce the ability for this nation to develop its arctic resources.

Moreover, the agencies' benefits justification for these costs is based on the agencies' faulty premise that a catastrophic oil spill will take place on Alaska's OCS in the next ten years. BOEM's previous analyses, and most recently its analysis undertaken as part of the Second Supplemental Environmental Impact Statement (SEIS) in support of Lease Sale 193, flatly contradict this assumption, and the agencies provide no support for the assumption. Indeed, the Lease Sale 193 SEIS concludes that there is a less than one percent chance that even a large oil spill (>1000 barrels) will occur during exploration. *See* <http://www.boem.gov/Risk-and-Benefits-in-the-Chukchi-Sea/>.

Of central importance in our nation's ability to benefit from the resource endowment of the Alaska OCS will be regulatory approaches that establish alignment of policy and consistency in regulation among agencies with jurisdiction over operations, and that support decision making with information and processes that take advantage of advances in science and technology. As the NPC stated in its report:

“Oil and gas exploration and development in the Arctic is extensively regulated. Drilling an offshore exploration well in the Arctic currently requires permitting from at least 12 principal state and federal agencies; progressing offshore development in the Arctic would require around 60 permit types through 10 federal agencies. Regulations should be adaptive to reflect advances in technology and ecological research, and achieve an acceptable balance considering safety, environmental stewardship, economic viability, energy security, and compatibility with the interests of the local communities. Prescriptive regulation may inhibit the development of new, improved technologies by suppressing the potential opportunity that drives advancement.”²

With this letter, API offers recommendations to best assure that this “acceptable balance” can take shape.

3. API Urges Adoption of Regulations That Accommodate a Broader Range of Equipment and Drilling Platforms

The proposed rules limit their consideration to a particular approach to drilling based on use of a floating rig, and the result is prescriptive rules that require particular equipment to the exclusion of other approaches that could be safely and effectively used. In a great many areas in the Arctic OCS, the conditions at prospective drill sites allow use of alternatives to floating rigs. Nevertheless the proposed regulations

² National Petroleum Council. *Arctic Potential: Realizing the Promise of U.S. Arctic Oil and Gas Resources*. 2015.

appear to be written from the perspective that the only foreseeable approach to exploration drilling projects in the region will involve floating rigs, and equipment and support systems compatible with floating rigs. This makes these Arctic-specific rules different than those that apply to other areas of the OCS and there is no Arctic-specific reason or justification for this.

In fact, wells in shallow waters of Beaufort Sea have been safely drilled in the past with bottom-founded or iced-in rigs, but such rigs may not be able to accommodate a containment dome or a mudline cellar, and so use of this type of rig would likely be precluded by the proposed rules. Jackup rigs are safe and viable in waters up to 300 feet deep in the Chukchi Sea—but the requirements prescribed in the proposed rules may eliminate their potential use, without providing any basis for such a limitation on operators' exploration plans. The rules should be more flexible and based on performance standards, in order to accommodate different, new, and better approaches.

It's not uncommon for BSEE to adopt regulations that accommodate different rig types, but for reasons unexplained, BSEE and BOEM did not take that approach here. The result is a rulemaking proposal that unnecessarily precludes approaches that do not align with the prescriptive rules it contains, but that based on industry's operating experience in the region can be shown to be safe and effective. In some cases, the proposed regulations refer to the possibility of alternative equipment, but there are no standards or criteria to provide any guidance on how alternative equipment would be evaluated for approval. Overall, if the regulatory focus is on floating rigs, then the rules should be applicable only to floating rigs. Alternatively, the rules could adopt a broader, more flexible and performance-based approach such as found in rules applicable to other areas of the OCS which do not prejudice the choice of drilling platforms.

4. API Urges Withdrawal of the Proposed Requirement that Operators Submit an Integrated Operations Plan (IOP)

API requests that BOEM not adopt proposed Section 550.204 that requires that operators proposing exploratory drilling activities on the Arctic OCS submit an Integrated Operations Plan (IOP) 90 days prior to filing an EP (Exploration Plan). The EP, required under OCSLA, is meant to provide the agency the information necessary to achieve its regulatory objectives pursuant to OCSLA requirements governing an operator's planned activities. In the event the EP does not meet the intended requirements, the appropriate steps should be taken to amend the EP process, rather than creating additional regulatory requirements.

Much of the information required in the IOP under proposed Section 550.204 is already gathered and submitted as part of an operator's EP, provided under existing SEMS regulations, or submitted as part of an operator's oil spill response plan. Some of the new information requested by BOEM is either outside the regulatory authority of BOEM or the agency's scope of expertise. This is acknowledged in the discussion of the IOP in the proposed rule, where the agencies explain, "the USCG administers laws and regulations governing maritime safety, security, and environmental protection and is also responsible for inspecting the vessels to which those laws and regulations apply." Nevertheless, while the proposed rule "acknowledge[es] the USCG's principal jurisdiction over vessel safety and security," it goes on to state that requesting duplicative information "early in the process . . . is also essential to DOI's statutory and regulatory responsibilities related to Arctic OCS oil and gas activities." This discussion fails to consider that BSEE or BOEM could obtain information in which it is interested from another agency that has jurisdiction over the matter of concern.

API also objects to the IOP for the reason that in many cases the information to be furnished in an IOP will be unobtainable based on the timeline the agencies proposed for submission of the document. BOEM has estimated that the submission of an IOP, including all required information will impose a time burden of only 90 hours per plan. BOEM notes that "[i]ndustry already compiles this information internally for

planning and contract oversight; therefore, the burden expected is minimal, just to prepare and submit to BOEM.” This statement is unsupported and inaccurate. While planning for exploration projects is a constant, the timing of availability of certain types of information can vary for many reasons. This factor alone could drastically increase the time burden estimated by BOEM by compelling an operator to compile this information to satisfy the particular timing of a compliance requirement as opposed to the requirements of a project and the sequence of decisions from a business or operational point of view. The preparation of an IOP for submittal could easily exceed the 90 hours of work estimated by BOEM, between compiling and drafting the plan for submittal and then (in all likelihood) having to respond to a large volume of requests for additional information from BOEM and other agencies. It is not clear how this additional compliance requirement would add value or provide information that the agency does not otherwise obtain through the EP or from other agencies.

If the IOP requirement remains intact in the final rule, API urges BOEM to provide clarification as to the role and authority of the reviewing agencies identified in the proposed rule. In the preamble to the proposed rule, DOI notes that “[t]hough BOEM would review the IOP to ensure that the operator’s submission addresses each of the elements listed in § 550.204, the IOP would not require approval by DOI or the other relevant agencies. Instead, the IOP would be an informational document intended to facilitate early review of important concepts related to an operator’s proposed exploratory drilling program.” API requests that DOI clarify what the process is following submittal of an IOP under the proposed rule. Specifically, it should be clear whether an operator is obligated to respond to requests for additional information from BOEM, BSEE, or the other agencies DOI proposes to provide access to the document. If operators are obligated to respond to such requests, associated review timings should be established to ensure operators receive feedback within 45 days of submission. This would provide operators with the opportunity to review and, if needed, amend their EP before final submission. Furthermore, it should be clarified whether EP approval will be dependent upon the completion of all requests for additional information stemming from the IOP.

API urges that the IOP requirement should be withdrawn.

5. API Urges Adoption of Regulations That Accept Alternative Approaches to Response to Loss of Well Control

API recognizes the interest of the agencies in assuring that operators in the Alaska OCS demonstrate that they would have access to, and could deploy, well control and containment resources that would be adequate to promptly respond to a loss of well control. In this area of unquestioned importance, API urges the agencies to recognize that relief wells have historically not been used to regain well control, and, in terms of stopping the flow and securing the well as quickly as possible, they may not represent the best solution when compared to recent technological advances such as capping stacks and seabed isolation devices. For these reasons, API urges the adoption of a more flexible regulatory approach that considers fit-for-purpose response planning alternatives to respond to loss of well control in the context of a given EP and the operating conditions it will be subject to.

a. Overview: The Need for Risk-Based Approaches to Well Control

Existing BSEE regulations (30 CFR § 250.141) provide that an operator “may use alternative procedures or equipment” after receiving approval from the appropriate Regional Supervisor,” if the proposed alternative “provide[s] a level of safety and environmental protection that equals or surpasses current BSEE requirements.” The proposed rule notes this existing regulatory provision and states that “operators may request approval of alternative compliance measures to the relief rig requirement in accordance with 30 CFR § 250.141.” See proposed 30 CFR § 250.472. This equivalency provision fails in several significant regards to address the issues created by the same season relief well proposal .

Firstly, the proposed rules fail to describe how an operator should demonstrate equivalency to a same season relief well, nor do they address the perceived risk reduction benefit, which is critical to establishing the baseline expectation. Secondly, and more fundamentally, the proposed rules fail to establish why a same season relief well should be a blanket requirement across all Arctic OCS MODU activities despite the range of risks to be considered and the numerous other available industry technologies and methods that have previously been utilized to successfully control wells.

b. API Urges Action on the NPC Arctic Report’s Recommendation to Quantify the Risks and Benefits of Alternatives to a Requirement for a Same Season Relief Well

The additional human and environmental risk introduced into an operation by providing for a same season relief well on stand-by argues for careful consideration of alternative measures to address loss of well control. In the low probability event of a loss of containment event, “relief” would not come from a second well, but rather from a source control tool that could be swiftly deployed, such as a capping stack. In lieu of imposing a requirement for a relief well, which carries with it many of the same risks as drilling the exploration well, API urges the agencies to act on the recommendation described in the NPC Arctic Report, that the industry and appropriate U.S. government agencies initiate a study to develop methodology to quantify the risks and benefits of multiple current barrier technologies, using appropriately detailed reliability data and assessments. The NPC Report further recommends that the results consider overall acceptability of risk levels, contribution of different risk mitigation practices, and justification of current practices on an as-low-as-reasonably-practicable basis, with comparison to other industries. The regulations should address separately, and in a performance-based manner, the objectives an operator must meet around source control versus a final kill of a well. Practices in assessment techniques from the nuclear, aviation, and petrochemical industries such as accident sequence precursor analysis are suggested for consideration. With a focus on spill prevention and barriers, such a study could be used as a basis to identify effective equivalent technologies for response to loss of well control in place of a requirement for a same season relief well. The time and ice/metocean conditions needed to enact these approved plans could then form the basis for determining an appropriate season end for primary drilling operations on a case-by-case basis.

Ultimately, BSEE’s proposed same season relief well requirement fails to follow longstanding executive guidance regarding effective and efficient performance-based regulations. Executive Order 13563, which affirms and expands upon the regulatory principles established by Executive Order 12866, states that regulations should, “to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.” This preference for performance-based regulation was reinforced most recently in the recommendations put forth in the Presidential Commission Report to the President on Deepwater Horizon (2011), which stated: “The Department of the Interior should develop a proactive, risk-based performance approach specific to individual facilities, operations and environments, similar to the ‘safety case’ approach in the North Sea.” Executive Order 13563 also mandates that agencies “consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives.” Given this express preference for performance-based regulations, BSEE should eliminate the same season relief well requirement and provide instead a requirement that an operator demonstrate in its plans that it has assets that can address a source control event. An operator should be permitted to select technology that is best suited to meet this objective within the confines of that operator’s particular plan.

c. The Importance of Prevention, Achieved through Prudent Well Design

The NPC Arctic Report describes in detail industry’s primary approach to loss of well control is prevention – achieved through adherence to established codes/standards and operations integrity management systems combined with a culture of safety and risk management. Wells can be safely drilled when designed for the range of risks anticipated, equipment has the required redundancy, personnel are trained, drills/tests are

conducted, and established procedures are followed. The primary method to achieve prevention is through focus from the rig floor to the executive office on training, on operations consistent with training, and on prudent well design. Multiple spill prevention measures and barriers are currently designed into the wells drilled in the OCS, and these barriers are defined and specified in API/ISO standards and offshore regulations enforced by BSEE and BOEM. Drilling fluid, casing design, cement, and other well components are the primary barriers and the blowout preventers (multiple redundancies) are the secondary barrier to prevent a release to the external environment. This is the case whether a well is drilled in a temperate water or Arctic marine environment.

After the Macondo incident in 2010, OCS operators, BSEE, and API significantly upgraded regulations and standards with respect to well integrity and well control. Operators must follow a strict set of controls that require extensive verification, testing, and certification of well control equipment, well designs, and barriers to the flow of hydrocarbons. In U.S. federal waters, there is ample regulation to ensure operators and rig owners follow prudent practices. BSEE regularly sends inspectors to the drilling rigs to verify compliance. Furthermore through its Standards program, API has numerous documents that specify the equipment and procedures for well integrity and for rigorous drilling practices. In the highly unlikely event that all of the normal barriers fail during a drilling operation, the industry has also developed new subsea shut-in devices and capping stack technology that has substantially increased capability to secure a well from any uncontrolled flow of hydrocarbons.

d. The Role and Utility of Relief Wells

A relief well is a directional well drilled to communicate with a nearby uncontrolled (blowout) wellbore and control or stop the flow of reservoir fluids. If it is assumed that the original rig is disabled, a second rig would need to be mobilized and brought into proximity of the flowing well. The second rig would need to be equipped with casing, cement, drilling fluids, and wellhead equipment to construct the relief well. The distance between the blowout well and the relief well typically ranges between 500 feet and 3500 feet.

The Minerals Management Service published two papers³ on statistical data for blowout wells in the outer continental shelf of the U.S. These studies covered the 35 years from 1971 to 2006. These reports state, “Although relief wells were initiated during several of the blowouts, all of the flowing wells were controlled by other means prior to completion of the relief wells.” The same situation occurred during the Macondo incident where well control was regained at the source through installation of a capping stack, not by drilling a relief well. Reliance on the false premise that relief wells provide a primary means of regaining well control would not only add substantially to already high drilling costs, it would also introduce risk by reducing the incentive or ability for an operator to use more effective alternatives appropriate to a given drilling program.

e. Well Control Response Technologies in the Arctic Operating Context

Among the reasons why API and its members are very concerned about the imposition of a requirement for same season relief wells is the effect that such a requirement would have on the already short season for exploratory drilling in much of the Alaska OCS. An explanation of the basis of this concern is in order.

The technical ability to explore and develop in the offshore Arctic is governed by a number of key factors, including water depth, ice conditions, and the length of the open water season. Drilling rigs that rest on the seafloor have a maximum usable depth of about 100 meters in ice; deeper water requires floating rigs. Exploration can be carried out in waters with a short ice-free season using floating drilling rigs in waters deeper than about 20 meters, but development and production generally requires year-round operation to be

³ Izon, David, Danenberger, E.P., and Mayes, Melinda, “Absence of Fatalities in Blowouts Encouraging in MMS Study of OCS Incidents 1992-2006”, *Drilling Contractor* magazine, pages 84-90, July/August 2007; Danenberger, E.P., “Outer Continental Shelf Drilling Blowouts, 1971-1991”, OTC #7248, 25th Annual Offshore Technology Conference, Houston, Texas, May 1993.

economic, which means using facilities that rest on the seafloor and are resistant to ice forces in ice-prone areas.

Most of U.S. Arctic offshore resources are in less than 100 meters of water and have some open water season. As a result, exploration is possible during summer and shoulder seasons with floating drilling rigs, and development and production are technically possible using conventional bottom-founded drilling facilities with numerous support vessels including oil spill response vessels. Such technology has been field-proven in neighboring regions such as Canada where 39 offshore, incident free wells were drilled in pack ice conditions during the late 70's and 1980's.

Current regulations and permit conditions only allow exploratory drilling activity during the open water season. The U.S. Arctic open water season is typically only 3 to 4 months long and can be much shorter in a given year or be shortened by mid-season ice intrusions. The useful drilling period is further shortened by restrictions in recent permits requiring the ability to drill a same season relief well before the onset of ice. The useful drilling season may also be shortened as a result of voluntary agreements or regulations requiring an operator to cease operations to accommodate subsistence harvesting and marine mammal migration. It should also be recognized that the potential exists for the effective season length to be further reduced due to ice / metocean conditions that necessitate suspending active operations or in years of late melting / early freeze up.

The proposed regulations would make it difficult, and in many cases, impossible, to complete one well in a single season. Any cost-benefit analysis of this rule package should account for the erosion to an operator's portfolio caused by the lost drilling days attendant to a requirement for a same season relief well. The fewer days an operator has during the open-water season to explore its lease, the greater the number of its leases that will expire before they can be evaluated. The size and distribution of Arctic OCS resources are expected to require multiple wells to evaluate recoverable resource size and development concept and commerciality. Multiple expensive mobilizations over many years would therefore likely be necessary to complete exploration of a prospect, substantially reducing the economic feasibility of offshore Arctic development. This subject is discussed in additional detail in the NPC Arctic Report, where it is noted that the U.S. lease system is development based. In other words to retain a lease, the operator must have gained enough information to be able to move into the commercial development phase by the end of the 10-year primary term for an OCS lease. The short drilling season in the Arctic can make this determination practically impossible to achieve within the 10 year term when the drilling of several wells may be required to enable appraisal of a field. Other Arctic nations acknowledge this factor through longer lease terms, or by providing an Operator the ability to retain a lease through the duration of exploration phase allowing extra time to determine technical or commercial viability (please see NPC Arctic Report Executive Summary at pages ES-25 through ES-26).

f. Primary and Secondary Barriers Described

In Arctic environments, API believes it will be more effective from the standpoint of management of human and environmental risk in the Arctic offshore to focus on prevention and alternate methods than on a relief well plan. Prevention through prudent well design and operations should be the primary method for containment. Alternate methods such as capping stacks or subsea shut-off devices are a secondary method of spill mitigation and containment. A capping stack could be installed much more quickly than a relief rig could be deployed and put in operation (days instead of weeks), and a subsea shut-in device could be activated in minutes. Additionally, in certain situations supplemental subsea equipment could be used to increase the range of blowout preventer (BOP) functions to further increase capability to perform well control operations.

As noted in the NPC Arctic Report, the industry has made significant advances in being able to prevent, contain, and mitigate impacts of spills in Arctic environments. Prevention is maintained through a set of primary and secondary barriers.

The primary barriers maintain control against backward flow of formation fluids during the drilling process. These begin with well planning and design based on knowledge of the subsurface formations and fluid pressures gained from seismic exploration. Steel casing and wellheads are designed to withstand formation pressures, and specially formulated cement seals the steel casing to the borehole. The weight of the drilling fluid column is designed and monitored to offset subsurface formation pressures. Careful control of the drilling process is facilitated by having a crew of well-trained personnel who constantly monitor well stability. This includes the use of sensors located near the drill bit that continuously measure downhole conditions and transmit them to the drilling control room and surface measurements of the drilling fluid volume and flow rates, as well as geoscientists onsite who analyze the rock cuttings from the well.

Secondary barriers include procedures to detect and control deviations from normal operating conditions and the BOP. An example of a deviation is an influx of formation fluids into the wellbore, also called a “kick.” Kicks are detected using equipment located on the deck of the drilling rig. If formation fluid flows into the wellbore, an increase in the volume of returning drilling fluid can be detected in the mud tanks and/or by gas detectors. A trained drilling crew will detect this and take the necessary action, which normally involves closing the BOP or pumping heavier mud into the wellbore.

The BOP has multiple, redundant, sealing components that can be remotely activated to close around or shear through pipe and seal the wellbore to provide containment of fluids in the event of a loss of well control. BSEE has numerous requirements for BOP tests. The BOP stack must be fully pressure tested every 14 days for subsea BOPs and every 21 days for surface BOPs, and a function test must be conducted every week. Also, the BOP stack must be pressure tested upon initial hook-up to the wellhead and after each casing string is set. Additional regulations implemented post-Macondo for BOPs include requirements to inspect for repair or remanufacturing at least every five years per the equipment owner’s PM program and the manufacturer’s guidelines. This maintenance may be performed on a staggered basis during the 5 year period. To ensure a broad range of BOP stack functionality, regulations require a minimum number of annular preventers, pipe rams and blind/shear rams, and additional redundancy such as two control stations, one located near the rig floor and the other distant from the rig floor.

Following loss of well control, other response measures are designed to limit the size of a spill once containment is lost and to respond to any spill. Flow-reduction measures are employed to decrease the rate of outflow by increasing the dynamic back-pressure applied by pumping through the BOP or other subsea devices. Flow-stoppage measures are employed to stop the outflow of a well to the environment through the use of shut-in devices such as a capping stack or a subsea isolation device at the seafloor whose operation is totally independent of the BOP. These tools are designed to stem any uncontrolled flow of oil as rapidly as possible to minimize damage to the environment. The final available flow-stoppage measure is a relief well, which is a separate well drilled to intercept and permanently stop the flow from a blown-out well. In all cases to date, OCS subsea well control has been regained at the wellhead without the use of a relief well.

6. API Urges that BSEE Not Grant Discretionary Authority to Restrict Discharge of Water-Based Muds and Cuttings that Have No Adverse Effect on the Environment

The U.S. Environmental Protection Agency, or a state environmental agency designated by EPA, not BSEE, regulates discharges of drilling muds and cuttings to state and federal waters of the U.S. Current National Pollutant Discharge Elimination System (NPDES) permits allow discharge of WBM and cuttings to federal, but not state, waters if they meet restrictions in the Effluent Limitation Guidelines (ELG).⁴

⁴ Neff, J. M. Fate and Effects of Water-Based Drilling Muds and Cuttings in Cold Water Environments. May 2010. Much of the discussion in this Section 6 is adapted or excerpted from this publication.

Proposed new section 250.300 would add provisions requiring the operator to capture all petroleum-based mud, and associated cuttings from operations that use petroleum-based mud, to prevent their discharge into the marine environment during exploratory drilling operations on the Arctic OCS. These provisions would also give the Regional Supervisors discretionary authority to require operators to also capture all water-based mud (WBM) and associated cuttings from Arctic OCS exploratory drilling operations (after completion of the hole for the conductor casing) to prevent their discharge into the marine environment based upon the Regional Supervisor's assessment of proximity to hunting and fishing grounds or what are described as showings of adverse effects on marine mammals, fish or their habitat. API is concerned that incorporation of this language into the rule will establish an expectation that the Regional Supervisor will exercise his authority to restrict discharge of WBM and associated cuttings despite abundant evidence that such discharges have no significant impact on the marine environment.

a. Description of Water-Based Muds and Cuttings and Their Environmental Effects

WBM consist of fresh or salt water containing a weighting agent (usually barite: BaSO₄), clay or organic polymers, and various inorganic salts, inert solids, and organic additives to modify the physical properties of the mud so that it functions optimally. Drill cuttings are particles of crushed rock produced by the grinding action of the drill bit as it penetrates the earth.

The total mass of WBM and cuttings discharged per exploratory well is about 2000 metric tons/well, and somewhat less for most development wells. Assessment of the fate and effects of drilling discharges has shown that water column impacts are transient and limited in spatial extent. When WBM and cuttings are discharged to the ocean, the larger particles and flocculated solids, representing about 90 % of the mass of the mud solids, form a plume that settles quickly to the bottom. The spatial extent of any such settled cuttings and muds is dependent on the oceanographic conditions in the area. Typically though, these effects are limited to within hundreds of meters of the well site, and depending on the drilling mud type, usually the duration of measurable effect on the environment is measured in years, not decades. The remaining 10 % of the mass of the mud solids consisting of fine-grained unflocculated clay-sized particles and a portion of the soluble components of the mud form another plume in the upper water column that drifts with prevailing currents away from the platform and is diluted rapidly in the receiving waters. In well-mixed ocean waters, drilling muds and cuttings are diluted by 100-fold within 10 m of the discharge and by 1000-fold after a transport time of about 10 minutes at a distance of about 100 m from the platform. Because of the rapid dilution of the drilling mud and cuttings plume in the water column, harm to communities of water column plants and animals is unlikely and has never been demonstrated.

WBM and cuttings solids settle to and accumulate on the sea floor. If discharged at or near the sea surface, the mud and cuttings disperse in the water column over a wide area and settle as a thin layer of a large area of the sea floor. If mud and cuttings are shunted to and discharged just above the sea floor in order to protect nearby sensitive marine habitats, the drilling solids may accumulate in a large, deep pile near the discharge pipe. Effects of WBM cuttings piles on bottom living biological communities are caused mainly by burial and low sediment oxygen concentrations caused by organic enrichment. Toxic effects, when they occur, probably are caused by sulfide and ammonia byproducts of organic enrichment. Recovery of benthic communities from burial and organic enrichment occurs by recruitment of new colonists from planktonic larvae and immigration from adjacent undisturbed sediments. Ecological recovery usually begins shortly after completion of drilling and often is well advanced within a year. Full recovery may be delayed until concentrations of biodegradable organic matter decrease through microbial biodegradation to the point where surface layers of sediment are oxygenated.

WBM are non-toxic or practically non-toxic to marine animals, unless they contain elevated concentrations of petroleum hydrocarbons, particularly diesel fuel. Most drilling mud ingredients are non-toxic or used in such small amounts in WBM that they do not contribute to its toxicity. Chrome and ferrochrome lignosulfonates are the most toxic of the major WBM ingredients. Although used frequently in the past in

the Gulf of Mexico, these deflocculants are being replaced in most WBM by non-toxic alternatives to reduce the ecological risk of drilling discharges.

Many field monitoring studies, mostly in the U.S. Gulf of Mexico and the North Sea, have been performed since the 1970s to determine short- and long-term impacts of drilling discharges on the marine environment. As a general rule, effects of WBM and cuttings discharges on the bottom environment are related to the total mass of drilling solids discharged and the relative energy of the water column and benthic boundary layer at the discharge site. In high energy environments, little drilling waste accumulates on the sea floor and adverse effects of the discharges can not be detected. In low-energy environments or where mud and cuttings are shunted to near the sea floor, large amounts of mud and cuttings solids may accumulate on the sea floor and adversely affect bottom communities within a few hundred m of the discharge.

b. Water-Based Muds and Cuttings in Arctic and Cold Water Marine Environments

More than 50 exploratory wells were drilled in the State and Federal waters of the U.S. Beaufort Sea and Chukchi Sea between 1981 and 2002. The exploratory wells were in 18 to 167 feet of water. Drilling muds and cuttings were discharged from most of these wells directly to the water in the open-water season, or to the surface of the ice or under the ice in the shore-fast ice season. Ocean discharges of WBM and cuttings from several of the Beaufort Sea exploratory wells were monitored. The results of these studies were consistent with the conclusions of the 1983 National Research Council (NRC) report on drilling discharges in the marine environment: disturbance to the marine environment was minor and recovery was rapid.

The U.S., MMS, BSEE, and the oil industry have been monitoring the effects of drilling activities in the development area of the Alaskan Beaufort Sea for more than 20 years. The monitoring has shown that little metal, mostly barium, and petroleum hydrocarbons accumulate in sediments within a few hundred feet of gravel drilling islands and WBM and cuttings discharges. The increase over background concentrations of barium and occasionally other metals in sediments near drilling operations is insufficient to cause harm to local bottom-dwelling marine invertebrates. Since all these metals are tightly bound to solid particles (barite or clays), they are not bioavailable or toxic to bottom-dwelling marine organisms. Environmentally significant increases in the concentration of petroleum hydrocarbons, particularly polycyclic aromatic hydrocarbons (PAH) in Beaufort Sea sediments have not been detected. Similar results have been reported at drilling sites in the Dutch, United Kingdom and Norwegian North Sea where only WBM and cuttings were discharged.⁵

Prohibition of discharge of WBM and associated cuttings would achieve no ascertainable benefit to the marine environment and would impose unreasonable logistical challenges and costs on operators relating to the interim storage and later transport of these materials.

7. API Urges Agencies Not to Introduce Regulations Incremental to the Existing Standards Established by the EPA for Cuttings Management in the Arctic OCS

Proposed new section 250.300 would add provisions requiring the operator to capture all petroleum-based mud, and associated cuttings from operations that use petroleum-based mud, to prevent their discharge into the marine environment during exploratory drilling operations on the Arctic OCS. The Clean Water Act grants EPA jurisdiction over all facilities which discharge pollutants from any point source into waters of the United States. This includes drill cuttings discharged from a rig into waters of the U.S. in Arctic

⁵ Neff, J. "Fate and Effects of Water Based Drilling Muds and Cuttings in Cold Water Environments". Duxbury MA, May 2010.

regions. Under EPA regulations control is already established to ensure that when cuttings discharge is permitted the associated impact to the environment is reduced to acceptable levels. Introducing an additional and redundant layer of regulation by BSEE may not only be outside the scope of BSEE's authority but it will inevitably lead to confusion and conflicts.

In many situations the ability to discharge cuttings provides Operators the opportunity to demonstrate the net environmental benefits associated with offshore treatment and discharge versus alternative approaches. In addition, increased regulation of cuttings management without consideration of net environmental effects, i.e. blanket prohibition of non-aqueous fluids (NAF) cuttings discharge, could hinder Operators' ability to use the most effective mud system for the well and increase the likelihood of operational issues.

In operations where cuttings capture and transport is required, a number of additional critical path activities are introduced including incremental cuttings processing, container lifting/handling and vessel transfers. These activities are dependent not only on equipment uptime but also local metocean conditions and when processing capability is compromised drilling operations must be suspended or progressed at a reduced rate. These potential impacts to operations increase the likelihood of downhole issues which could lead to significant wellbore stability non-productive time (NPT) events. Such potential complications need to be carefully considered as part of any cuttings management system.

As a result of the overall complexity associated with both NAF and WBM cuttings management we urge BSEE and BOEM to recognize the authority of EPA to regulate discharge of drilling muds and cuttings, and to delegate this authority to the states. Instead of proposing redundant regulations, BSEE and BOEM should focus the proposed regulations on ensuring the current requirements are met during the well permitting and execution process. Such an approach will also allow industry to implement new and improved technologies that will further reduce the net environmental impact while further increasing overall operations integrity.

8. API Urges Agencies Not to Require Tests of a Blow-Out Preventer at a Frequency That Would Risk Affecting Reliability and Integrity of Equipment

In new rule 250.447 BSEE proposes to revise paragraph (b) of this section to require a BOP pressure test frequency of one test every 7 days for Arctic OCS exploratory drilling operations. On this subject of the frequency of tests of BOP equipment and systems, API urges BSEE not to increase the frequency of BOP testing from every 14 to every 7 days. Under current regulations, BOP functionality is already confirmed every 7 days via a full function test, (CFR 250.449 Paragraph h) in addition to the full pressure tests every 14 days. Based on the experience of testing of subsea BOPs in the Gulf of Mexico, generally followed by BSEE non-acceptance of reported anomalies reliable evidence exists that too frequent a cycle of testing does not improve BOP reliability and longevity, and the continuous testing and pulling for repair and additional testing of BOP's can be detrimental to their state of readiness and long term reliability. The data does not show that more testing is necessary or will increase reliability. Further there is no technical basis that BOP's in the Arctic should have any difference in test frequency. BOPs are commonly used in the Arctic today – just not in Federal waters. The surface BOPs used in State waters and on land (and BOPs installed in GOM deepwater environments) are working in very cold conditions and have years of history of successful use and testing. Furthermore BOPs are often used in the normal course of drilling a well unrelated to well control and occasionally to circulate small well inflows. Thus BOPs are not just an emergency device and test frequency that could adversely affect their readiness and long term reliability are neither in the interest of operational safety nor environmental protection.

9. API Urges Regulations That Support Flexibility in Oil Spill Response and That Accept Selection and Execution of Strategies That Are Most Effective Given the Circumstances of a Spill

On the matter of prevention, preparedness and assurance of a capability of response to oil spills from drilling and production operations in the Alaska OCS, API believes that both regulation and operations must be informed by the following:

- The role of prevention as the primary defense against loss of well control
- Recent technical advances in source control
- The long history of research into oil behavior and spill response in ice
- Flexibility to select and execute the most effective strategy or strategies in context with the situation in the event response to a spill is required

The greatest reduction of environmental risk comes from preventing any loss of well control. This is achieved through adherence to established codes/standards and operations integrity management systems, combined with a culture of safety and risk management. Industry's primary approach to prevention is guarding against loss of well control. A major well-control event is extremely unlikely, and recently upgraded U.S. regulations, standards, and practices make the likelihood of a major well control event even less likely. Recent steps taken to improve safety include certification by a licensed professional engineer that there are two independently tested barriers across each flow path and that the casing design and cementing design are appropriate and independent third-party verification of the BOP. These engineering safeguards are backed up by requiring strict adherence to operations integrity management systems as part of an overall culture of safety and risk management. The multiple spill prevention measures and barriers that are designed into the wells are defined and specified in U.S. and international standards and U.S. offshore regulations. Arctic well design and construction follows these standard offshore well practices.

Additional well control devices and techniques are now available that are independent of the controls on the drilling rig. Examples of these devices are capping stacks that are deployed after an incident to stop the flow from the well and subsea isolation devices installed before the well encounters potential hydrocarbon-bearing zones in addition to standard BOP. These systems offer a dramatic reduction in worst-case discharge volumes because they are designed to stop the flow of oil in a matter of minutes, hours, or days versus weeks or months. Consequently, they can provide a superior alternative for quickly stopping the flow, minimizing the spilled volume of hydrocarbons and securing the well than that offered by the requirement for same season relief well and/or oil spill containment systems.

Over the past four decades, the oil industry and government have made significant advances in being able to detect, contain, and clean up spills in Arctic environments. Many of these advances were achieved through collaborative international research programs with a mix of industry, academia, and government partners. Much of the existing knowledge base in the area of Arctic spill response draws on a long history of experiences with a number of key field experiments, backed up by laboratory and basin studies in the United States, Canada, Norway, and the Baltic countries.

a. Advances in Research and in Lessons Learned

The ongoing Arctic Oil Spill Response Technology Joint Industry Programme (ART JIP) is a comprehensive research initiative bringing together the world's leading Arctic scientists and engineers. This program was initiated in 2012 as a collaboration of nine international oil and gas companies: BP, Chevron, ConocoPhillips, Eni, ExxonMobil, North Caspian Operating Company, Shell, Statoil, and Total. These companies have come together to further enhance industry knowledge and capabilities in the area of Arctic spill response as well as to increase understanding of potential impacts of oil on the Arctic marine environment. Such collaborative projects, in a noncompetitive technology arena wherein all stakeholders stand to gain from mutual advancement of capabilities, have been the hallmark of industry's oil spill response research.

In addition to substantial industry-sponsored research, there has been a long and effective research effort led by government organizations. For more than three decades, MMS/BSEE has funded programs for open water and in ice. The National Oceanic and Atmospheric Administration (NOAA) is involved in a variety of oil spill research projects in conjunction with academia and other agencies that includes development of an Arctic version of its oil spill trajectory model GNOME (General NOAA Operational Modeling Environment). The U.S. Environmental Protection Agency is conducting tests of dispersant efficacy and toxicity at low temperatures.

There is extensive knowledge on oil spill response and behavior in ice and cold water based on at least four decades of research. Industry and government agencies continue to put significant resources into technology enhancements through collaborative research that will further improve the operability and effectiveness of different response systems in ice. Defining and gaining acceptance of existing technology and technology enhancements requires integrating a diverse set of stakeholder groups, including Arctic community residents and regulators, into a collaborative effort to resolve uncertainties and agree in advance on the most effective oil spill response options for a given drilling program.

In addition, API objects to BSEE's proposal to combine oil spill response planning with plans relating to source control and containment equipment (SCCE). The information sought in proposed § 250.70 is best maintained in a separate plan for the SCCE equipment such as the capping stack, cap and flow system, containment dome, and other similar subsea and surface devices. The Oil Spill Response Plan (OSRP) may include a reference to the separate SCCE plan dealing with the capping stack, cap and flow system, etc., but the OSRP is already a large plan that is utilized and well understood by oil spill responders. BSEE's proposal that the two plans be combined will inject confusion for personnel executing the OSRP, creating an unacceptable safety risk.

b. The Importance of the Full Tool Kit of Oil Spill Response Alternatives

The overall goal of spill response is to control the source as quickly as possible, minimize the potential damage caused by an accidental release, and employ the most effective response tools for the incident. Promoting mutual understanding of the benefits, limitations, and trade-offs of different response tools would facilitate achieving this goal. Response options that are highly effective under certain conditions may be ineffective in others depending on spill size, location, oil type/weathering, and environmental conditions.

API strongly encourages development of an educated and more balanced perspective regarding the full range of available response techniques, including controlled burning and the application of chemical dispersants. The response community and the general public must be informed of the benefits, limitations and tradeoffs associated with these techniques, and be provided the information to understand that even under the best of conditions, one can never expect to recover or eliminate all of the oil spilled. API also supports development of Federal and state planning standards and regulations that address realistic operational and environmental constraints, as well as practical levels of response capability. The type and number of resources that can be maintained and operated safely and effectively for a given area, project, or facility should reflect a careful assessment of the most probable spill events that might occur, while recognizing that backup resources can be cascaded within a short period of time to support a more serious spill event.

Technology enhancements will continue to improve the operability and effectiveness of different response systems in ice. There nevertheless remains an ongoing challenge to share information on spill response capabilities in Arctic conditions with a diverse set of stakeholder groups, residents and regulators to gain acceptance that all response options, including burning and dispersants, need to be available for responders to use on short notice as the spill behavior and environmental conditions dictate. Ultimately, decisions to employ a particular strategy need to be contingent on demonstrating a positive net environmental benefit.

10. API Urges BSEE to Leave Key Operational Decision making in the Hands of Individual Operators to Maximize Operations Integrity

A consistent theme noted in the proposed regulations is for BSEE to take an increased role in day to day operations and critical decision making processes. Some specific examples include:

- 250.188 regarding immediate oral reporting of *even potential* ice management activities
- 250.452 regarding real time monitoring requirements, onshore command centers and BSEE access
- 250.471(h) You must deploy and use SCCE when directed by the Regional Supervisor
- 250.472 "... the Regional Supervisor may direct you to drill a relief well...."
- 254.90 (c) "... the Regional Supervisor may direct you to deploy and operate your spill response equipment and/or your capping..... as part of announced or unannounced exercises...."

Shifting operational decision making away from Operators and their rig site personnel exposes the operations to increased risk levels. During any given operation the onsite personnel have the best understanding and most complete picture of the current operation, key risks and critical considerations. In addition, their experience in active operations provides them with the judgment to make effective real-time decisions within the bounds specified by the Operators governing procedures and operations integrity guidelines. This responsibility includes full control of the operations and the full authority to stop activities at any time.

As a general rule, Operators that use shore-based operations centers do so to assist personnel on the rig with monitoring of specific functions of the drilling operation, not to assume control of operational activities. Furthermore, Operators should have the flexibility to develop a performance-based approach (rather than follow a prescriptive requirement) described in their EP or Authorization for Permission to Drill (APD) describing what functions of these systems will be monitored in the wells(s), which will vary with the rig used and the equipment on board the rig, as well as the location of any support facilities ashore. It should be clear to BSEE that it remains the primary responsibility of the rig personnel to monitor information from drilling operations on a 24/7 basis and to take appropriate actions without waiting for direction from a remote shore base. Utilizing real-time data centers and shorebase decisionmaking may lead to a decrease in offshore personnel's responsibility and accountability which is critical to maintaining safe operations and responding to emergency situations. In times of communication interruptions or significant offshore events (well control, station keeping difficulties, vessel collisions, equipment failure, etc) there is generally insufficient time to interact with shorebase command centers to plan a response. It is these critical moments that offshore supervision is key and its effectiveness can only be maintained if the primary decisionmaking remain focused at location. To ensure offshore personnel are equipped with the necessary knowledge prior to specific operations, a range of preparatory engagements are held with the shorebase engineering and operations support teams or through on-site engineering assistance. In these engagements, the key risks and critical steps are discussed to prepare the offshore team for the upcoming operations, including discussion of potential risks and appropriate responses. This approach should be maintained for all active drilling operations.

In situations where an escalation of response is required, such as mobilizing Source Control and Containment Equipment or commencing relief well operations, the Operator is in the best position to select the appropriate next steps due to their understanding of the overall operational situation and available resources. In obtaining permits for Arctic operations the Operator will be required to submit a number of documents to address how they intend on responding to a variety of emergency scenarios. These documents provide BSEE and other regulatory bodies the ability to direct the ultimate response to ensure the necessary SSH&E standards are met while leaving the actual implementation to the expertise of the Operator and their identified sub-contractors.

The proposed BSEE rules seek to incorporate a number of reporting requirements associated with ice monitoring that due to the dynamic and variable nature of ice movements in the Arctic will likely result in frequent interactions with BSEE. Each offshore Arctic drill site has unique ice and metocean conditions, and the rigs selected to drill will vary in their ability to interact with ice and maintain operations in those environments. For effective interactions on ice monitoring and management, BSEE would need to be fully engaged in and familiar with the particular ice management procedure for the well, risk assessments, training and execution preparations in order to be prepared to fully engage. To meet the intent of the proposed rule it is recommended that the requirement focus on the need for Operators to specify in advance the reporting requirements based on the assessed risks associated with the specific well and location. These guidelines could be incorporated into Operator's Ice Management Plan which would be reviewed and approved as part of the regulatory permitting process.

The proposed BSEE rules require reporting of kicks or unplanned events that could compromise well control. It is critical that regulations seek to maintain focus on prevention and, if necessary, responding to the situation on site. Requirements for immediate oral reporting to BSEE outlined in the proposed rules is vague and needs to be clarified. Immediate engagement with BSEE will be of limited value as the overall situation assessment will still be underway. In the circumstances described in this provision, the operator's sole focus should be on making conditions safe at the well site, yet this provision seems to take the focus away from operators taking the actions necessary to ensure safety, instead putting an emphasis on immediate engagement with the regulator through reporting. As the Operator will be responsible for immediate response, it is recommended that no additional reporting regulations are adopted incremental to the existing OCS requirements.

Furthermore, BSEE's stated desire for immediate reporting implies that the agency believes that kick control is the responsibility of the regulator. API requests clarification that BSEE is not suggesting that the agency is going to direct well control activities beginning with any unexpected kick. There are circumstances, when drilling into a formation that a change of pressure is predicted, or a thin small zone that is charged, that a kick could be taken and it would be considered a normal part of the exploration drilling activity, but under the language used in the proposed regulation could be considered a "potential well control incident". Premature regulator intervention would increase confusion and any existing risks pertaining to the status of the well under such circumstances. Inclusion of information about kick occurrences in existing regularly submitted well activity reports (daily and weekly) will fully satisfy the need for the regulator to have better information.

With respect to proposed §254.90 (c), if adopted, this section must acknowledge the jurisdiction of the U.S. Coast Guard over marine oil spill response preparedness and operations, as well as well containment operations that may be carried out in connection with response to a spill. Under the National Contingency Plan, in the event of a spill from an offshore drilling operation, federal on-scene command established for any such incident will be led by a representative of the U.S. Coast Guard.

Additionally, API requests that BSEE remove the annual auditing requirements set forth in proposed §250.1920(b)(5). BSEE has not provided any justification for this increased frequency which will not have an effect on safety or compliance since the SEMS program does not change on an annual basis. Existing BSEE regulations require an audit of the SEMS program on a three-year cycle which has worked effectively for operations in the Gulf of Mexico and should be more than adequate for operations in the Alaska OCS.

With all decisions related to active offshore operations there is a certain level of risk, responsibility and accountability. In the event BSEE seeks to direct active drilling operations, further clarification is required on the associated responsibility, accountability and liability that would be assumed in the event of any incidents that occur as a direct result of those actions. It is for these reasons we urge BSEE to leave key operational decisionmaking in the hands of the Operators and focus the regulations on ensuring that drilling plans and operations are risk based, and fit for purpose for every proposed location.

11. API Urges Delaying the Release of the Proposed Arctic Rules until the Recently Proposed BOP and Well Control Rules Have been Finalized

On April 13, 2015, proposed new rules were issued by BSEE for all OCS areas that are focus on Blowout Preventer Systems and Well Control. The proposed rules significantly alter the current regulations in both content and structure and overlap in numerous areas with the proposed Arctic OCS rules. The heightened requirements that will result with the final publication of the BOP and Well Control rules will impact considerations for the Arctic OCS rules. Because of this, API requests that the comment period of the Arctic OCS rules be re-opened after the BOP and Well Control final rules are published. This will ensure all parties fully understand the base regulatory regime for OCS areas and enable more informed decisions to be made regarding incremental Arctic OCS requirements.

Thank you for considering these comments. If you have any questions, please do not hesitate to contact the undersigned.

Very truly yours,

A handwritten signature in black ink that reads "Richard Ranger". The signature is written in a cursive, flowing style.

Richard Ranger
Senior Policy Advisor
American Petroleum Institute

cc: Secretary of Interior Sally Jewell
Director Abigail Ross Harper, Bureau of Ocean Energy Management
Director Brian Salerno, Bureau of Safety and Environmental Enforcement



Via email & www.regulations.gov

June 20, 2016

Mr. Peter Meffert
Office of Policy, Regulation, and Analysis
Bureau of Ocean Energy Management
U.S. Department of the Interior
45600 Woodland Road
Sterling, VA 20166

**Re: Joint Trades Comments
Air Quality Control, Reporting and Compliance; Proposed Rules
81 Federal Register 19718 (April 5, 2016)
Docket Id: BOEM-2013-0081**

Mr. Meffert,

The American Petroleum Institute (API), the Offshore Operators Committee (OOC), the National Ocean Industries Association (NOIA), the Independent Petroleum Association of America (IPAA), the International Association of Drilling Contractors (IADC), and the Offshore Marine Services Association (OMSA) – hereinafter referred to as “the Joint Trades” - respectfully submit the attached comments on the Bureau of Ocean Energy Management’s (BOEM), proposed rule *Air Quality Control, Reporting and Compliance*, 81 Federal Register 19718 (April 5, 2016), Docket Id: BOEM-2013-0081.

The Joint Trades represent energy companies who conduct the vast majority of the Outer Continental Shelf (OCS) oil and natural gas exploration and production activities in the United States. Additionally, many of our associations’ members are involved in drilling, equipment manufacturing, construction, and support services for the offshore oil and natural gas industry, and all will be adversely impacted by this BOEM rulemaking.

Our members recognize that offshore operations must be conducted safely and in a manner that protects the environment. The U.S. offshore industry has advanced the energy security of our nation, and contributed significantly to our nation’s economy. Our goal is for operations integrity and fit-for-risk designs, and we are concerned that many of the requirements in the proposed rule will have no beneficial impact on air quality while adding unnecessary financial and data collection burden to the industry. In addition, we are concerned that the proposed rule could materially impair the ability to maintain current production operations, reduce future development and production, or result in taking of leases and stranding of valuable reserves, all of which could lead to reduced royalties as well as lower sales, income, and ad valorem tax payments by the industry. To avoid these negative consequences, it is imperative that BOEM and industry collaborate to develop rules that are more workable and effective.

Our comments are submitted without prejudice to any of our member companies' right to have or express different or opposing views. We have encouraged all of our members to submit comments on the proposal.

In developing this response, industry drew on the expertise of our member companies and environmental consultants that resulted in thousands of man hours of effort. Industry is providing this technically-based set of comments to aid BOEM in its efforts to create a robust and effective air quality rule. As stated in our earlier comment letters, we believe additional time to review and comment on this lengthy and complex rulemaking was needed and, had it been provided, would have further contributed to the proposal's effectiveness. Indeed, additional time to review and comment on this complicated and lengthy rulemaking is warranted to provide the public an adequate opportunity to participate as required under the Administrative Procedure Act. Going forward substantial industry-regulator engagement is imperative to generate and implement a workable and effective rule.

This letter highlights some of the proposed requirements that will have the greatest impact on industry, but there are numerous other specific proposed requirements that will also have significant impacts. The enclosed attachments include detailed information on how we believe these proposed regulations will significantly impact industry, and offer recommendations for clarifying the proposed rule language.

Significant issues with the greatest impact are highlighted below:

1. BOEM Has Not Demonstrated That Revised Rules Are Needed

Issue – Executive Order 12866 requires “Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.” In the proposed rule, BOEM has not identified a problem that must be addressed.

The Outer Continental Shelf Lands Act (OCSLA) authorizes the Secretary of the Interior to promulgate regulations for compliance with the National Ambient Air Quality Standards (NAAQS) to the extent that activities authorized under OCSLA significantly affect the air quality of any state. BOEM's existing air quality regulatory program (AQRP) has worked successfully for more than 30 years to fulfill this narrow mandate.

Alaska and Gulf of Mexico coastal state air quality plans (State Implementation Plans) and conclusions from dozens of BOEM's own analyses indicate that OCS sources do not have a significant effect on onshore air quality. Given that BOEM already has practices in place to ensure compliance with recent air quality standards (such as the 1-hour NO₂ standard) and that BOEM has not demonstrated OCS sources significantly affect the air quality of any state, there is no reasonable justification for an expansive new regulation that brings with it significant cost implications to the industry.

Recommendation – BOEM should not proceed with the expansive overhaul of the air quality regulatory program until there is a demonstration that OCS sources significantly affect onshore air quality and jeopardize compliance with the NAAQS.

2. Ongoing Regional Air Quality Studies Should Be Completed to Inform the Rule

Issue – BOEM has initiated multi-year, multimillion-dollar air quality studies designed to determine whether OCS emissions significantly affect onshore air quality in Alaska and in the Gulf coast states and, if necessary, to determine whether changes in emissions exemption thresholds are warranted. These studies will also conduct regional photochemical modeling to determine the extent to which precursor pollutants

affect onshore ozone and PM_{2.5} concentrations. Given that the existing regulatory program is operating effectively, as evidenced by BOEM's own studies and state SIPs that show that OCS sources do not have a significant effect on onshore air quality, there is no reason to revise emissions exemption thresholds that determine when additional modeling and expensive emission reduction measures are required.

Recommendation – BOEM should not proceed with the development of any new emission exemption thresholds or modeling requirements unless the air quality studies are completed and demonstrate a need for revisions.

3. BOEM is Not Authorized to Regulate Emissions from Mobile Support Craft

Issue - The proposed rule would require operator plans to include extensive information about support vessels (referred to as Mobile Support Craft or “MSC”), and vessel emissions would be included in the exemption determination and in modeling analyses. The proposed rule is not clear if emission sources on support vessels would be subject to emission reduction measures (ERM).

BOEM cannot consider MSC emissions when determining whether OCS activities significantly affect the air quality of a state because MSCs are not activities authorized under OCSLA. BOEM does not authorize mobile vessels, and OCSLA explicitly excludes vessels from the Secretary's legal purview. BOEM may only regulate vessels when they cease to be vessels and instead become, or become part of, an “artificial island,” “installation” or “device” that is “permanently or temporarily attached to the seabed for the purpose of exploring for, developing, or producing” oil, gas or sulphur from the OCS. (See 43 U.S.C. § 1333(a)). Unlike vessels, BOEM authorizes these structures and devices, and may subject them (and only them) to its air quality regulations under section 5(a)(8) of OCSLA.

Aside from legal constraints, there are numerous practical considerations that preclude effective regulation of vessel emissions. For example, the proposed rule requires detailed information regarding the support vessels, including engine data, tank capacities, travel routes, emission factors, and short-term and long-term emissions. The designated operator of an OCS facility is likely to contract with another entity for support vessel services. At the time of plan submittal, neither the contractor nor the designated operator will know with any certainty what vessel will be used let alone any of the detailed information the rule requires.

Furthermore, there are already well understood, comprehensive, and effective national and international programs in place that regulate vessel emissions. Analogous to national EPA programs that establish motor vehicle emission standards, MARPOL Annex VI establishes emissions standards that apply to U.S. and foreign vessels of any type (including mobile offshore drilling units, floating drilling rigs, and other vessels) operating within the North American Emission Control Area (ECA). With the International Maritime Organization (IMO) programs in place, the gradual replacement of engines and ships will reduce emissions without additional regulation by BOEM. In addition, EPA establishes standards for marine engines for U.S. registered or flagged vessels. Just as the national motor vehicles emissions programs preempt permitting under new source review for onshore industrial facilities, MARPOL and EPA emissions requirements should preempt permitting of vessels associated with OCS projects. The recent IMO designation of the North American coastal waters as an ECA has significantly reduced the sulphur level of the fuel consumed by vessels transiting the OCS, both those supporting energy production and those in other usage.

Recommendation – BOEM should eliminate all provisions related to accounting for or regulating emissions from MSC.

4. BOEM’s Proposed Consolidation of Facility Emissions is Unnecessary and Unjustified

Issue - The proposed rule modifies the current definition of “facility” in the regulations. In addition, BOEM proposes to add several definitions to the rule, including “complex total emissions,” “proximate activities,” “projected emissions,” and “attributed emissions.” Through these definitions, BOEM would not only treat as one source of regulated emissions activities that had previously been treated as separate, but also would require groups of separate facilities on separate leases to be evaluated together and comply with the regulations jointly simply because they may share a common owner or operator.

There are a number of legal and practical challenges to consolidating emissions from existing facilities with those from a facility submitting a new or modified plan. These include due process issues, the protection of sensitive, proprietary, or confidential operational information, and the need for clear criteria that can be consistently applied to determine which existing facilities are to be consolidated with a new facility. As a further complication, emissions from vessels supporting the consolidated facilities must also be identified and included in the analyses. Virtually no details on how consolidation is to be accomplished have been presented in the proposed rule.

The purported justification for consolidation is to ensure applicants do not segment plans so emissions are less than thresholds that require modeling and ERM requirements. However, we believe the existing air quality program has safeguards to ensure that cumulative impacts from proximate facilities are regulated when necessary, and offer additional comment on when a cumulative analysis may be required.

Recommendation – The proposed requirement to consolidate existing facilities with a proposed facility should not be adopted because it exceeds BOEM’s authority under OCSLA. Instead, BOEM should adopt the definition of “facility” recommended in our attached comments, which more closely adheres to the scope of BOEM’s statutory authority under section 5(a)(8) of OCSLA. BOEM should abandon the notion of aggregating emissions across multiple, proximate facilities simply because they share a common record title owner or operator.

5. Recertification of Existing Facilities is Unnecessary

Issue - Proposed section 550.310(c) would require lessees to re-submit previously approved plans at least every 10 years to verify compliance with BOEM’s current air quality regulations, including those provisions relating to new information gathering and reporting requirements.

The requirement to re-submit plans every 10 years is inconsistent with section 25(h)(3) of OCSLA, which indicates that BOEM can only review an existing plan “based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan.” BOEM lacks the authority to require re-submission or revision of an already-approved plan, absent some indication of changed conditions or impacts. It follows, therefore, that BOEM may not promulgate a regulation imposing a blanket requirement that all operators periodically re-submit their plans for review unless there is a specific reason showing that each re-submitted plan warrants review because there have been changed conditions or impacts. Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone cannot possibly constitute grounds for re-submission and re-approval, on new and far more onerous terms, of existing DPPs and DOCDs. Accordingly, BOEM may not require re-submission and re-approval of existing plans.

Furthermore, BOEM's existing procedures assure continued compliance with NAAQS. When new facilities are proposed, facilities whose emissions exceed exemption thresholds are required to demonstrate compliance with the NAAQS by adding model-predicted pollutant concentrations (due to facility emissions) to background concentrations. The background concentrations include contributions from existing OCS sources, however small, so BOEM can be assured that existing facilities do not contribute to violations of the NAAQS. Second, current section 550.303(j) authorizes the Regional Supervisor to require submittal of additional information when they judge an individual facility alone or in combination with others may significantly affect the air quality of an onshore area.

Recommendation - BOEM should not require resubmission and additional approval of existing plans.

6. BOEM's Emission Reduction Credit Program is Not Fully Developed and the IRIA Underestimates the Cost of Credits

Issue - The proposed regulation allows the use of emissions credits as a component of emission reduction measures (ERM). In concept, the flexibility to be able to use emissions credits for ERM purposes would be beneficial to OCS facilities. However, the practical application of emissions credits programs requires establishing basic principles as part of the implementing regulation. A number of fundamental components of an effective emissions reduction credit (ERC) program are missing from the proposed rule, rendering the proposal incomplete.

Furthermore, the average cost that BOEM's IRIA assumes for emissions credits does not reflect recent costs for emission reduction credits in ozone nonattainment areas near the Gulf of Mexico, and ERC costs in these areas could rise. The EPA lowered the 8-hour ozone NAAQS from 75 ppb to 70 ppb in October 2015 and certain areas along the Gulf of Mexico coast are expected to continue their status as nonattainment areas. This means the demand for onshore NO_x and VOC emission reduction credits in this region will likely continue, and BOEM's proposed regulation could create additional demand. Because of this increased demand, we believe the availability of ERCs is questionable and that the ERC cost analysis performed by BOEM considerably underestimates the cost of this emission reduction concept.

Although there may be value in an emission reduction program for facilities in the Gulf of Mexico when BOEM's regulatory framework is developed, there is no emission reduction credit program in Alaska. Consequently, BOEM cannot rely on ERCs as cost effective ERM options for Beaufort and Chukchi sea facilities. The regulatory impact analysis should be updated accordingly.

Recommendation – BOEM must further develop the emission reduction credit concept and include the additional program elements in a re-proposed rule.

7. BOEM Must Maintain the Point of NAAQS Compliance at Onshore Locations

Issue - The proposed rule would relocate the point of compliance from the state shoreline to the seaward edge of the state seaward boundary. The point of compliance is an important component of the AQRP as it is used to determine exemptions from detailed air quality analyses, the significance of air impacts, whether emissions cause or contribute to a violation of the NAAQS, and the need for ERM. (See 81 Fed. Reg. at 19738-19740, 19794). Although a state's territory extends to its seaward boundary, this is not the appropriate point at which to assess air-quality impacts for a number of reasons.

First, as discussed, under section 5(a)(8) the Secretary’s authority is limited to promulgating regulations for “compliance with the [NAAQS] pursuant to the [CAA] to the extent that activities authorized under [OCSLA] significantly affect the air quality of any State.” Under the relevant state implementation plans, the border of the air quality control regions appears to extend only to the shoreline and not to the respective states’ territorial waters. As such, NAAQS do not apply in the territorial waters.

Second, when enacting section 5(a)(8), Congress clearly was concerned only with impacts to onshore air quality. For example, the legislative history states:

The conferees intent was that...regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area. 1978 U.S.C.C.A.N. at 1684-1685.

Third, BOEM itself recently acknowledged that because the NAAQS are intended to protect human health, BOEM is only concerned with the onshore impacts of OCS activities. (See BOEM 2017-2022 Draft Multisale EIS at xvii (“Since the primary NAAQS are designed to protect human health, BOEM focuses on the impact of these activities on the States, where there are permanent human populations”)).

Finally, BOEM’s proposal to use the seaward boundary to assess air quality impacts of OCS activities is arbitrary because the geographic extent of states’ territorial waters is not uniform. Some state seaward boundaries extend three miles from shore, others nine miles from shore.

We also note practical considerations that argue against this change. As BOEM acknowledges in the preamble, there are no ambient air quality monitoring stations offshore, so there is no way to determine background concentrations to represent current air quality. Use of onshore data would likely overstate offshore background concentrations by very large margins.

Recommendation - The point at which OCS air impacts are assessed must be the shoreline and not the state seaward boundary.

8. The Costs of the Proposed Rule Outweigh the Benefits

Issue - BOEM’s Initial Regulatory Impact Analysis (IRIA) estimates that the ten-year net present value of the proposed regulation is negative \$97 million using a discount rate of three percent - which indicates that the cost of the regulation will exceed the benefit. This represents a government policy that is doing more harm than good.

The current BOEM cost benefits analysis overlooked, or did not quantify many costs, such as the costs of installation and maintenance of emission reduction measures, the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NOx emissions, and the cost to modify MSCs to provide the proposed fuel consumption and engine operational data. Our consultant surveyed OCS operators and vendors for historical cost information, and considering just some of the additional costs of the proposed rule, we estimate a total 10 year cost of more than \$3.4 billion, more than 10 times BOEM’s estimate.

Recommendation – BOEM must consider all the costs of the proposed rule and provide a more accurate Regulatory Impact Assessment. Although the IRIA demonstrated costs outweigh benefits, improving the quality and scope of the analysis will confirm the proposed rule is not justified.

9. BOEM’s Proposed Rule is Incomplete

Issue - In many instances the provisions of the proposed rule appear to be incomplete or premature. BOEM has specifically solicited comments in the preamble on approximately forty issues in the proposed rule that have not been fully developed, defined or concretely proposed. Many of the issues that are undeveloped would be critical components of any final air quality regulatory program, and may have significant impact to offshore operators. Without fully developed proposals on these issues, industry does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. Constructive feedback on many, if not most, of these requests involves detailed technical review and significant information gathering. Due to the compressed comment period, we were not afforded enough time to give these requests the full consideration and/or the technical analysis they warrant. Furthermore, there are many instances where BOEM’s intent described in the preamble does not align with the proposed rule as written.

Recommendation - BOEM must publish a revised proposed rule that addresses the approximately forty issues for which it has solicited comment and which contains proposed rule text consistent with the preamble discussion. The revised proposed rule must address the critical components with sufficient specificity to facilitate meaningful stakeholder comment. To do otherwise would violate the Administrative Procedure Act.

Summary

We believe the expansive rule revision BOEM proposes is unnecessary and many of the provisions are beyond the scope of BOEM’s existing statutory authority over OCS air emissions. There are many incomplete concepts in the proposed rule that must be developed after consideration of our comments and offered again for public review and comment.

BOEM has indicated the desire to finalize the proposed rule by December 2016. We are concerned that this artificial deadline will impede BOEM’s ability to adequately address stakeholder comments and develop a final rule that both protects the environment and does not hinder America’s energy renaissance, particularly when the agency has conceded there is no urgent issue for the proposed regulation to address. BOEM should take sufficient time between the close of the comment period and promulgation of any final rule to review and analyze all the submitted comments, make appropriate revisions, and complete the necessary internal and interagency reviews.

If you have any questions, or require clarification, on any of the comments provided here by the Joint Trades, please contact either Cathe Kalisz at kaliszc@api.org or Greg Southworth at greg@offshoreoperators.com

We appreciate the opportunity to provide these comments, and look forward to further discussions to resolve the significant issues associated with the proposed rule.

Yours truly,



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Randall Luhti
President
National Ocean Industries Association



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International Association of Drilling Contractors

Attachments

cc with Attachments:

Abigail Hopper, Director, Bureau of Ocean Energy Management
Walter Cruickshank, Deputy Director, Bureau of Ocean Energy Management

Comments on the Proposed Rulemaking – 30 CFR Part 550 Air Quality Control, Reporting, and Compliance; Proposed Rules

June 20, 2016

Docket ID No. BOEM-2013-0081

American Petroleum Institute (API)
Offshore Operators Committee (OOC)
National Ocean Industries Association (NOIA)
Independent Petroleum Association of America (IPAA)
International Association of Drilling Contractors (IADC)
Offshore Marine Services Association (OMSA)

EXECUTIVE SUMMARY

The Outer Continental Shelf (OCS) regulated community has numerous concerns with the Bureau of Ocean and Energy Management's (BOEM's) proposed revisions to its air quality regulatory program (30 CFR Part 550 – Air Quality Control, Reporting, and Compliance). Our primary concern is that BOEM's proposed changes exceed the limited scope of BOEM's authority to regulate emissions under section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1334(a)(8). Under this section BOEM may regulate the emissions of activities it authorizes only if those authorized activities have a significant effect on the air quality of a state that threatens attainment or ongoing compliance with the National Ambient Air Quality Standards (NAAQS) in that state.

We believe the issues we address in our comments are sufficient to warrant withdrawal of this proposed rule. A new rule addressing the numerous deficiencies should not be re-proposed in advance of ongoing multi-year, multi-million dollar air quality studies designed, in part, to inform this rulemaking.

All previous environmental studies and assessments conducted by BOEM and others have concluded that emissions from OCS sources are not significantly impacting the air quality of any state. The new, ongoing studies will either confirm previous assessments, or, if they determine that there are significant air quality impacts, will help inform which pollutants may be of concern, which modeling tools are needed, and how exemption thresholds should be developed. In either case, BOEM should not proceed with any rulemaking until the studies are completed.

The proposed rule also includes several proposed requirements that are unjustified because they exceed BOEM's regulatory authority under the OCSLA, are not practically or administratively feasible, or provide little or no environmental benefit. Additionally, and as importantly, some critical rule provisions are not fully developed and incomplete as to preclude meaningful evaluation of impacts on OCS entities.

Listed below are our primary concerns with the proposed rule. To facilitate review of our comments, we have summarized the concern and provided a recommendation with a reference to the detailed comments for additional supporting discussion.

BOEM Has Not Demonstrated a Need for the Rule Revisions

Executive Order 12866 requires “Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.” BOEM has not identified a problem that must be addressed.

OCSLA authorizes the Secretary of the Department of Interior (Interior) to promulgate regulations for compliance with the NAAQS to the extent that activities authorized under OCSLA significantly affect the air quality of any state. BOEM's current Air Quality Regulatory Program (AQRP) has worked successfully for more than 30 years to fulfill this narrow mandate.

The only justification BOEM offers for this accelerated rulemaking is that “Waiting to publish these regulatory changes until 2018 or 2019, when both the Alaska and Gulf of Mexico exemption threshold studies are completed, would make it more difficult to ensure that BOEM meets its statutory duties.”¹

Alaska and Gulf of Mexico coastal state air quality plans (State Implementation Plans) and conclusions from dozens of BOEM’s own analyses indicate that OCS sources do not have a significant effect on onshore air quality. Given that BOEM already has practices in place to ensure compliance with recent air quality standards (such as the 1-hour NO₂ standard) and that BOEM has not demonstrated OCS sources significantly affect the air quality of any state, there is no justification for an expansive new regulation with huge cost implications.

Recommendation – BOEM should not proceed with the expansive overhaul of the AQRP until there is a demonstration that OCS sources significantly affect onshore air quality and jeopardize compliance with the NAAQS.

Refer to Sections 1.1, and 2.3 for detailed comments on this matter.

Regional Air Quality Studies Now Underway Are Needed to Inform the Rule

BOEM is in the midst of multi-year, multi-million dollar air quality studies designed to determine whether OCS source emissions significantly affect onshore air quality in Alaska and in the Gulf coast states and, if necessary, to determine whether changes in emissions exemption thresholds (EETs) are warranted. These studies will also conduct regional photochemical modeling to determine the extent to which precursor pollutants affect onshore ozone and particulate matter less than or equal to 2.5 micrometers in diameter (PM_{2.5}) concentrations. Given that the existing regulatory program is operating effectively, as evidenced by BOEM’s own studies and by State Implementation Plans (SIPs) that show that OCS sources do not have a significant effect on onshore air quality, there is no justification to revise EETs that determine when additional modeling and expensive emission reduction measures (ERMs) are required.

Recommendation – BOEM should not proceed with the development of any new EETs or modeling requirements unless the air quality studies demonstrate a need and inform decisions regarding appropriate exemption thresholds.

Refer to sections 2.4 and 8.2 for detailed comments on this matter.

BOEM is Not Authorized to Regulate Emissions from Mobile Support Craft

The proposed rule revisions would require submitted plans to include extensive information about support vessels (referred to as Mobile Support Craft or MSC) and vessel emissions would be included in the exemption determination and in modeling analyses. It is not clear if emission sources on support vessels would be subject to ERM.

¹ Air Quality Control, Reporting, and Compliance, Initial Regulatory Impact Analysis, RIN: 1010-AD82, page 64.

BOEM cannot consider MSC emissions when determining whether activities it authorizes significantly affect the air quality of a state because MSC are not “activities authorized” under OCSLA. BOEM does not authorize mobile sources, and OCSLA explicitly excludes vessels from the Secretary’s legal purview. BOEM may only regulate vessels when they cease to be vessels and instead become or become part of an “artificial island,” “installation” or “device” that is “permanently or temporarily attached to the seabed for the purpose of exploring for, developing, or producing” oil, gas or sulphur from the OCS. See 43 U.S.C. § 1333(a). Unlike vessels, BOEM authorizes these structures and devices, and may subject them (and only them) to its air quality regulations under section 5(a)(8) of OCSLA.

Aside from legal constraints, there are numerous practical considerations that preclude effective regulation of vessel emissions. For example, the proposed rule requires detailed information regarding MSC, including engine data, tank capacities, travel routes, emission factors, and short-term and long-term emissions. The designated operator of an OCS facility is likely to contract with another entity for support vessel services. At the time of plan submittal, neither the contractor nor the designated operator is likely to know with any certainty what vessel will be used, let alone any of the detailed information the rule requires.

Furthermore, there are already programs in place that regulate vessel emissions. Analogous to national Environmental Protection Agency (EPA) programs that establish motor vehicle emission standards, Annex VI to the International Convention on the Prevention of Pollution from Ships (MARPOL Annex VI) establishes emissions standards that apply to US and foreign vessels of any type (including Mobile Offshore Drilling Units (MODUs), floating drilling rigs, and other platforms) operating within the North American Emission Control Area (ECA). With the International Maritime Organization (IMO) programs in place, the gradual replacement of engines and ships will reduce emissions without additional regulation by BOEM. In addition, EPA establishes standards for marine engines for US registered or flagged vessels. Just as the national motor vehicles emissions programs preempt permitting under new source review for industrial facilities onshore, MARPOL and EPA emissions requirements should preempt permitting of vessels associated with OCS facilities.

Recommendation – BOEM should eliminate all provisions related to accounting for or regulating emissions from MSC.

Refer to Section 1.2.4 and Chapter 3 for detailed comments on this matter.

BOEM’s Proposed Consolidation of Facility Emissions is Unnecessary and Unjustified

The proposed rule modifies the current definition of “facility” in the regulations. In addition, BOEM proposes to add several definitions to the rule, including “complex total emissions,” “proximate activities,” “projected emissions,” and “attributed emissions.” Through these definitions, BOEM would not only treat as one source of regulated emissions activities that had previously been treated as separate, but also would require groups of separate facilities on separate leases to be evaluated together and to comply with the regulations jointly simply because they may share a common owner or operator. If EETs are exceeded based on the emissions of any facility or the combined facilities, the impacts would need to be addressed for either an existing facility undergoing a plan resubmission or for a new plan to go forward.

There are a number of legal and practical challenges to consolidating existing facility emissions with those from a facility submitting a new or modified plan. These include due process issues, the protection of sensitive, proprietary, or confidential operational information, and the need for clear criteria that can consistently be applied to determine which existing facilities are to be consolidated with a new facility. As a further complication, emissions from vessels supporting the consolidated facilities must also be identified and included in the analyses. Virtually no details on how consolidation is to be accomplished have been presented in the proposed rule.

The purported justification for consolidation is to ensure applicants do not segment plans so emissions are less than thresholds that require modeling and ERM requirements. However, we believe the existing air quality program has safeguards to ensure that cumulative impacts from proximate facilities are regulated when necessary, and offer additional comment on when a cumulative analysis may be required.

Recommendation – The proposed requirement to consolidate existing facilities with a proposed facility (§ 550.303(d)) should not be adopted because it exceeds BOEM’s authority under OCSLA. Instead, BOEM should adopt the definition of “facility” recommended in our comments, which more closely adheres to the scope of BOEM’s statutory authority under section 5(a)(8) of OCSLA. BOEM should abandon the notion of aggregating emissions across multiple, proximate facilities simply because they share a common record title owner or operator.

Refer to Section 1.4 and chapters 4 and 5 for detailed comments on this matter.

The Costs of the Proposed Rule Outweigh the Benefits

BOEM’s Initial Regulatory Impact Analysis (IRIA) estimates that the ten year net present value of the proposed regulation is negative \$97 million using a discount rate of three percent, which indicates that the cost of the regulation will exceed the benefit. This represents a government policy that is doing more harm than good.

The current BOEM cost benefits analysis overlooked or did not quantify many costs, such as the costs of installation and maintenance of ERM, and the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NO_x emissions. Our consultant surveyed OCS operators and vendors for historical cost information and considering just some of the additional costs of the proposed rule, we estimate a total 10 year cost of more than \$3.4 billion, more than 10 times BOEM’s estimate.

Recommendation – BOEM must consider all the costs of the proposed rule and provide a more accurate Regulatory Impact Assessment (RIA). Although the IRIA demonstrated costs outweigh benefits, improving the quality and scope of the analysis will confirm the proposed rule is not justified.

Refer to Appendix B for detailed comments on BOEM’s IRIA.

BOEM's Proposed Rule is Incomplete

In many instances the provisions of the proposed rule appear to be incomplete or premature. BOEM has specifically solicited comments in the preamble on approximately forty issues that have not been fully developed, defined, or concretely proposed. Many of the issues that are undeveloped would be critical components of any final air quality regulatory program, and may have significant impact to offshore operators. Without fully developed proposals on these issues, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. Furthermore, there are many instances where BOEM's intent described in the preamble does not align with the proposed rule as written.

Recommendation - BOEM must publish a revised proposed rule that addresses the approximately forty issues for which it has solicited comment and that resolves inconsistencies between the preamble and the text of the proposed rule. The revised proposed rule must address the critical components with sufficient specificity to facilitate meaningful stakeholder comment.

To do otherwise would violate the Administrative Procedure Act (APA).

Refer to sections 1.5.3, 2.5, 2.6, 7.1, 7.2, 8.6, 8.7, 11.1, and 12.4 for detailed comments on this matter.

Recertification of Existing Facilities is Unnecessary

Proposed § 550.310(c) would require lessees to resubmit previously approved plans at least every 10 years to verify compliance with BOEM's current air quality regulations, including those provisions relating to new information gathering and reporting requirements.

The requirement to resubmit plans every 10 years is inconsistent with section 25(h)(3) of OCSLA, which indicates that BOEM can only review an existing plan "based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan." BOEM lacks the authority to require resubmission or revision of an already-approved plan, absent some indication of changed conditions or impacts. It follows, therefore, that BOEM may not promulgate a regulation imposing a blanket requirement that all operators periodically resubmit their plans for review unless there is a specific reason showing that each resubmitted plan warrants review because there have been changed conditions or impacts. Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone cannot possibly constitute grounds for resubmission and re-approval, on new and far more onerous terms, of existing Development and Production Plans (DPPs) and Development Operations Coordination Documents (DOCDs).

Furthermore, BOEM's existing procedures assure continued compliance with NAAQS. When new facilities are proposed, facilities whose emissions exceed exemption thresholds are required to demonstrate compliance with the NAAQS by adding model-predicted pollutant concentrations attributable to facility emissions to background concentrations. The background

concentrations include contributions from existing OCS sources, however small, so BOEM can be assured that existing facilities do not contribute to violations of the NAAQS.

Recommendation: BOEM should not require resubmission and additional approval of existing plans.

Refer to sections 1.3.2 and 4.1, and Chapter 10 for detailed comments on this matter.

BOEM's Emission Reduction Credit Program is Not Fully Developed and the IRIA Underestimates the Cost of Credits

The proposed regulation allows the use of emissions credits as a component of ERM. In concept, the flexibility to be able to use emissions credits for ERM purposes would be beneficial to OCS facilities. However, the practical application of emissions credits programs requires establishing basic principles as part of the implementing regulation. A number of fundamental components of an effective ERC program are missing from the proposed rule, rendering the proposal incomplete.

Furthermore, the average cost that BOEM's IRIA assumes for emissions credits does not reflect recent costs for emission reduction credits in ozone nonattainment areas near the Gulf of Mexico, and ERC costs in these areas could rise.

The EPA lowered the 8-hour ozone NAAQS from 75 ppb to 70 ppb in October 2015, and certain areas along the Gulf of Mexico coast are expected to continue their status as nonattainment areas. This means the demand for onshore NO_x and VOC emission reduction credits in this region will likely continue, and BOEM's proposed regulation could create additional demand.

Because of this increased demand, we believe the availability of ERCs is questionable and that the ERC cost analysis performed by BOEM considerably underestimates the cost of this emission reduction concept.

Although there may be value in an emission reduction program for facilities in the Gulf of Mexico when BOEM's regulatory framework is developed, there is no emission reduction credit program in Alaska. Consequently, BOEM cannot rely on ERCs as cost effective ERM options for Beaufort and Chukchi sea facilities. The RIA should be updated accordingly.

Recommendation: Further develop the emission reduction credit concept and include the additional program elements in a re-proposed rule.

Refer to sections 7.1.1, 7.1.5, and 7.5 for detailed comments on this matter.

BOEM Must Maintain the Point of NAAQS Compliance at Onshore Locations

The proposed rule would relocate the point of compliance from the state shoreline to the seaward edge of the state seaward boundary. The point of compliance is an important component of the AQRP as it is used to determine exemptions from detailed air quality analyses, the significance of air impacts, whether emissions cause or contribute to a violation of the NAAQS, and the need for ERM. (See 81 Fed. Reg. at 19738-19740, 19794). Although a

state's territory extends to its seaward boundary, this is not the appropriate point at which to assess air-quality impacts for a number of reasons.

First, as discussed, under section 5(a)(8) the Secretary's authority is limited to promulgating regulations for "*compliance with the [NAAQS] pursuant to the [CAA] to the extent that activities authorized under [OC SLA] significantly affect the air quality of any State.*" (emphasis added). Under the relevant SIP, the border of the air quality control regions (AQCR) appears to extend only to the shoreline and not to the respective states' territorial waters. As such, NAAQS do not apply in the territorial waters.

Second, when enacting section 5(a)(8), Congress clearly was concerned only with impacts to *onshore* air quality. For example, the legislative history states:

The conferees intent was that...regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area.

1978 U.S.C.C.A.N. at 1684-1685.

Third, BOEM itself recently acknowledged that because the NAAQS are intended to protect human health, BOEM is only concerned with the onshore impacts of OCS activities. The BOEM 2017-2022 Draft Multisale Environmental Impact Statement (page xvii) states "Since the primary NAAQS are designed to protect human health, BOEM focuses on the impact of these activities on the States, where there are permanent human populations".

Finally, BOEM's proposal to use the seaward boundary to assess air quality impacts of OCS activities is arbitrary because the geographic extent of states' territorial waters is not uniform. Some state seaward boundaries extend three miles from shore, others nine miles from shore.

We also note practical considerations that argue against this change. As BOEM acknowledges in the preamble, there are no ambient air quality monitoring stations offshore, so there is no way to determine background concentrations to represent current air quality. Use of onshore data would likely overstate offshore background concentrations by very large margins.

Recommendation: The point at which OCS air impacts are assessed must be the shoreline and not the state seaward boundary.

Refer to sections 1.2.5, 8.4, and 8.6 for detailed comments on this matter.

Summary

We believe the expansive rule revision BOEM proposes is not necessary and many of the provisions are beyond the scope of BOEM's statutory authority over OCS air emissions. There are many incomplete concepts in the proposed rule that must be more fully developed after consideration of our comments and offered again for public review and comment.

BOEM has indicated the desire to finalize the proposed rule by December 2016. We are concerned that this artificial deadline will impede BOEM's ability to adequately address stakeholder comments and develop a final rule that both protects the environment and does not hinder America's energy renaissance, particularly when the agency has conceded there is no urgent issue for the proposed regulation to address. BOEM should take sufficient time between the close of the comment period and promulgation of any final rule to review and analyze all the submitted comments, make appropriate revisions, and complete the necessary internal and interagency reviews.

INTRODUCTION

BOEM has proposed revisions to 30 CFR 550, Subparts A, B, C, and J. These proposed revisions, referred to as BOEM's "Air Quality Control, Reporting and Compliance" rule, were published in the Federal Register on April 5, 2016. The proposed rule represents substantive changes to the existing regulatory framework, including the replacement of the current 30 CFR 550 Subpart C rule text in its entirety. The new rule would exponentially increase the requirements imposed on offshore operators and is not reasonable considering the minimal impact of OCS operations on onshore air quality.

As stated in our earlier comment letters, we believe additional time to review and comment on this lengthy and complex rulemaking was needed and, had it been provided, would have further contributed to the proposal's effectiveness. Indeed, additional time to review and comment on this complicated and lengthy rulemaking is warranted to provide the public an adequate opportunity to participate as required under the APA. Going forward, substantial industry-regulator engagement is imperative to generate and implement a workable and effective rule.

We offer the following comments on the proposed regulation. Comments provided in Chapter 1 address key legal issues raised by BOEM's proposed rule, and Chapters 2 through 13 address various technical and policy issues. We have provided suggested regulatory text revisions in redline-strikeout format in Appendix A. Appendix B presents our comments on BOEM's IRIA. Finally, Appendix C provides responses to each of BOEM's solicitations for comment. BOEM has specifically solicited comments on approximately forty issues in the proposed rule that have not been fully developed or defined. Many of the issues that are undeveloped are critical components of the air quality regulatory program, and may have significant impact to offshore operators. Constructive feedback on many, if not most, of these requests involves detailed technical review and significant information gathering. Due to the compressed comment period, we were not afforded enough time to give these requests the full consideration and/or the technical analysis they warrant.

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Appendices

Appendix A – Requested Changes to Proposed Rule

Appendix B – Comments on Initial Regulatory Impact Analysis

Appendix C – Responses to BOEM’s Specific Requests for Comment on Rule Provisions

1 Legal Analysis

1.1 BOEM has failed to demonstrate the need for sweeping new regulations.

The Bureau of Ocean Energy Management's (BOEM's) authority to regulate air emissions on the Outer Continental Shelf (OCS) is limited to section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1334(a)(8). Section 5(a)(8) authorizes the Secretary to promulgate regulations:

...for compliance with the [N]ational [A]mbient [A]ir [Q]uality [S]tandards [(NAAQS)] pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.), to the extent that activities authorized under [OCSLA] significantly affect the air quality of any State.

To date, despite the detailed information gathering and analytical requirements of BOEM's current regulations, the agency has *never* found that any OCS facility, individually or cumulatively, caused or contributed to a violation of the NAAQS.

Apart from the putative benefits of reducing emissions associated with offshore oil and gas activities, which, as discussed below, is beyond the scope of BOEM's statutory authority, BOEM has not provided any legally defensible justification for its expansive and complex regulatory proposal. To the contrary, BOEM has made clear that additional regulation of OCS emissions is unnecessary. Even the March 2016 Environmental Assessment accompanying this proposed rule concedes that the environmental impact of all the requirements of the proposal would be "minimal" because "on the whole...OCS operations have a minimal impact on the air quality onshore." Oil, Gas, and Sulphur Operations in the Outer Continental Shelf 30 CFR Part 550 – Proposed Subparts A, B, C and J, Environmental Assessment (March 2016) at 17.

BOEM's recent multisale Draft Environmental Impact Statement (EIS) for Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022 also demonstrates that emissions from offshore oil and gas facilities are, in BOEM's words, "minor." As recently as April 2016, BOEM explained in its Draft EIS that region-wide Lease Sale 249, which would offer approximately 92.3 million acres for sale, result in the installation of dozens of new facilities, and produce between 0.211-1.118 billion barrels of oil and 0.547-4.24 trillion cubic feet of gas, would not have any significant impact on onshore air quality, either individually or cumulatively with nine similar lease sales. In the EIS, BOEM concludes that the "air quality impacts of OCS oil and gas exploration, development and production, as well as the non-OCS oil- and gas-related activities sources" associated with the sales would be "minor." *Id.* at 4-12. This finding is consistent with the most recent analysis of the air impacts associated with OCS operations conducted by BOEM's predecessor, the Minerals Management Service (MMS), which similarly concluded that OCS activities had no significant impact on state air quality. See Gulf of Mexico Air Quality Study, Final Report (Aug. 1995), www.data.boem.gov/PI/PDFImages/ESPIS/3/3427.pdf.

BOEM is currently in the midst of conducting new OCS air quality studies. The agency is clearly acting prematurely by proposing to finalize the proposed rule before the studies are complete. It is simply unclear why BOEM believes the information it currently has regarding the absence of onshore air quality impacts urgently compels more stringent regulation. At a minimum, because

BOEM's rush to regulation is completely unsupported by any evidence whatsoever that a problem even exists, its proposal to impose an expensive, administratively burdensome, and potentially disruptive suite of new regulations on OCS lessees and operators is arbitrary, capricious, and an abuse of discretion.

BOEM should not rush to promulgate regulatory requirements that BOEM itself acknowledges are unnecessary, and should at least postpone this rulemaking effort until the current OCS air quality studies are completed and the results are made publicly available.

1.2 Section 5(a)(8) of the Outer Continental Shelf Lands Act represents the full extent of BOEM's authority to regulate OCS air emissions.

BOEM's authority to regulate air emissions on the OCS is limited by section 5(a)(8) of OCSLA, which represents the full extent of BOEM's jurisdiction over OCS emissions. This is clear based not only on the plain language of the statute, but also on an examination of the statute's legislative history.

Congress amended OCSLA in 1978 to add, *inter alia*, section 5(a)(8). See Pub. L. 95-372, § 204 (1978). An earlier House version of the legislation included a proposed subsection (a)(9), which would have authorized the Secretary to regulate air quality above the OCS. See H. Rep. No. 95-590, at 9 (Aug. 29, 1977) (proposing sections 5(a)(8) and (a)(9) of OCSLA). According to the House Conference Report on the 1978 OCSLA amendments, which was recognized by the Ninth Circuit Court of Appeals as "perhaps the strongest evidence of congressional intent outside of the language of [OCSLA] itself,"² the decision *not* to adopt proposed section 5(a)(9) demonstrates "[t]he conferees' intent...that the regulations promulgated by the secretary *not* generally require that the air mass above the OCS...be brought into compliance with...air quality standards..." See H.R. Conf. Rep. No. 95-1474, at 85-86 (Aug 10, 1978) (Reprinted in 1978 U.S.C.C.A.N., 1674, 1684-1685) (emphasis added). Accordingly, by enacting the specific and limited mandates of section 5(a)(8), while simultaneously declining to enact 5(a)(9), Congress clearly intended to limit the scope of the Secretary's authority to regulate OCS emissions. This conclusion is also consistent with the well-established principle of statutory interpretation: *expressio unius est exclusio alterius* (the inclusion of one is the exclusion of others). See, e.g., *FDA v. Brown and Williamson Tobacco Corp.*, 529 U.S. 120, 160 (2000).

OCSLA does not provide any other source of authority for the Secretary to regulate OCS air emissions beyond that which is expressly granted in section 5(a)(8). First, the so-called "general regulatory authority" established in section 5(a), which was also a part of the 1978 OCSLA amendments, does not give BOEM independent authority to regulate offshore emissions for any purpose not specified in section 5(a)(8). See 43 U.S.C. § 1334(a).³ Such an interpretation would not only directly conflict with the clear intent of Congress in enacting the

² *State of California v. Kleppe*, 604 F.2d 1187, 1196 (9th Cir. 1979).

³ The "general regulatory authority" instructs the Secretary to "prescribe such rules as may be necessary to carry out [the provisions of OCSLA related to the leasing of the OCS]," and allows the Secretary "to prescribe and amend such rules and regulations as he determines to be necessary and proper in order to provide for the prevention of waste and conservation of the natural resources of the [OCS], and the correlative rights therein..." 43 U.S.C. § 1334(a).

specific scope of authority in section 5(a)(8), it would also run afoul of the fundamental principle of statutory interpretation that specific statutory language trumps more general statutory language. See *Fourco Glass Co. v. Transmirra Products Corp.*, 353 U.S. 222, 228 (1957) (“However inclusive may be the general language of a statute, it will not be held to apply to a matter specifically dealt with in another part of the same enactment.”) (citations omitted); see also *Green v. Block Laundry Machine Co.*, 490 U.S. 504 (1989). Second, the broad language at the end of section 5(a), which states that “[t]he regulations prescribed by the Secretary...shall include, *but not be limited to* [the following provisions],” also cannot be interpreted to grant the Secretary authority beyond that set forth in section 5(a)(8). Congress could not have intended to precisely prescribe the Secretary’s authority to regulate OCS emissions under section 5(a)(8), while simultaneously authorizing the Secretary to promulgate whatever air quality or emission-limiting regulations she deems appropriate. Such an interpretation would ignore the careful legislative decision-making process evidenced in the legislative history, and allow the simple phrase “not limited to” to inordinately expand the express grant of congressional authority to regulate emissions. Cf. *Whitman v. Am. Trucking Assn’s, Inc.*, 531 U.S. 457, 468 (2001) (“Congress...does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions – it does not...hide elephants in mouseholes”); *MCI Telecom. Corp. v. AT&T*, 512 U.S. 218, 231 (1994).

Because section 5(a)(8) of OCSLA limits BOEM’s authority to regulate OCS air emissions, any provision of the proposed rule that exceeds this limit is invalid and in excess of BOEM’s statutory authority. 5 U.S.C. § 706(2)(C).

1.2.1 BOEM does not have “jurisdiction” over OCS air emissions pursuant to section 328(b) of the Clean Air Act.

Proposed section 550.301, titled “Under what circumstances does this subpart apply to operations in my plan?” incorrectly asserts that section 328(b) of the Clean Air Act (CAA), 42 U.S.C. § 7627(b), gives BOEM “jurisdiction” over activities described in OCS plans. This is simply not the case. Section 328 of the CAA establishes the U.S. Environmental Protection Agency’s (EPA) authority to regulate emissions associated with “OCS sources,” which are defined in section 328(a)(4)(C) of the CAA.

The scope of CAA section 328(b) is very limited vis-à-vis the Secretary of the Interior. Specifically, it: (1) imposes on her the obligation to consult with the EPA Administrator to ensure coordination of the OCSLA regulations with EPA’s onshore pollution control regulations; and (2) requires her to complete a research study by November 15, 1993, examining the impacts of OCS emissions on onshore areas that are not in NAAQS attainment for either ozone (O₃) or nitrogen dioxide (NO₂). Section 328(b) of the CAA does not impose on the Secretary any other requirements or grant her any other authority over OCS emissions.

Because section 328(b) of the CAA does not implicate the Secretary’s “jurisdiction” in any way, BOEM should remove the reference to that provision from proposed section 550.301.

1.2.2 Proposed § 550.307(a) imposes limits on the emission of volatile organic compounds from long-term OCS sources even where there is no evidence that the VOC emissions would threaten, cause, or contribute to a violation of the NAAQS.

Section 5(a)(8) of OCSLA authorizes the Secretary to promulgate regulations for compliance with the NAAQS to the extent that activities authorized under OCSLA significantly affect the air quality of any state. As explained in OCSLA's legislative history:

[t]he standards of applicability the conferees intended the Secretary to incorporate in such regulations is [sic] that when a determination is made that offshore operations may have or are having a significant effect on the air quality of an adjacent onshore area, and may prevent or are preventing the attainment or maintenance of the ambient air quality standards of such area, regulations are to be promulgated to assure that offshore operations conducted pursuant to this act do not prevent the attainment or maintenance of those standards.

1978 U.S.C.C.A.N., 1674, 1684 (emphasis added). BOEM therefore lacks the authority to regulate OCS emissions absent a finding that those emissions: (1) "significantly" affect the air quality of a state; and (2) interfere with a state's ability to achieve or maintain compliance with the NAAQS.

BOEM proposes a three-step process for determining whether to regulate emissions of pollutants. First, under the procedures detailed in the proposed rule, the operator would determine whether emissions associated with an OCS activity are less than BOEM-identified emission exemption thresholds (EETs), based on the lessee's or operator's projected emissions. See Proposed § 550.303. If projected emissions would not exceed the EETs, then BOEM would consider the emissions *de minimis*, and no further action would be required. Proposed § 550.303(e). If, on the other hand, emissions of a pollutant were to exceed an EET, then the lessee or operator would be required to proceed to step two and model the dispersion of that pollutant to determine its impact on the air quality of an adjacent state. See Proposed § 550.304. To determine the degree of onshore impact, BOEM proposes to adopt EPA thresholds, including Ambient Air Increments (AAIs) and Significant Impact Levels (SILs), which BOEM uses as thresholds for determining whether OCS emissions cause or contribute to a violation of the NAAQS. See 81 Fed. Reg. at 19777.⁴ If projected emissions are expected to exceed the applicable thresholds, BOEM would proceed to the third step of the process and evaluate emission reduction measures (ERM) and determine whether to require emission controls.

BOEM arbitrarily proposes to abandon this three-step approach with respect to volatile organic compounds (VOCs) from long-term OCS sources. Under the proposal, if VOC emissions associated with an OCS activity are anticipated to exceed the BOEM-identified EETs (which, in

⁴ As discussed further in Section 2.2 of these comments, using AAIs for this purpose is inappropriate because AAIs are unrelated to determining compliance with the NAAQS.

the context of the other pollutants, would merely trigger dispersion modeling), BOEM would skip step two and jump to step three and require lessees or operators to propose ERM. See Proposed § 550.307(a). Although in the preamble BOEM indicates that there is no AAI or SIL for VOCs, the absence of such standards does not authorize the agency to forego determining whether VOC emissions affect attainment or maintenance of the NAAQS onshore – an express statutory requirement – before regulating them. BOEM may not impose ERMs for VOC emissions simply because the agency has no convenient standard for assessing whether those emissions affect attainment or maintenance of the NAAQS. To the contrary, absent such a determination, BOEM has no authority to regulate emissions of VOCs at all. Because this proposed truncated process would neither consider the *significance* of the effect of the emissions on the “air quality of [a] [s]tate” nor endeavor to assess the impact of the emissions on onshore *attainment or maintenance of the NAAQS*, the proposed VOC regulations in section 550.307 are inconsistent with the mandate of section 5(a)(8) and exceed BOEM’s authority.⁵

1.2.3 OCSLA does not grant BOEM any authority with respect to greenhouse gases and hazardous air pollutants.

Proposed section 550.105 defines “air pollutant” to include greenhouse gases (GHGs) and hazardous air pollutants (HAPs), even though GHGs and HAPs are outside the scope of BOEM’s authority under section 5(a)(8) of OCSLA. In the preamble, BOEM indicates that it does not intend to include GHGs or HAPs under the purview of the proposed rule. See 81 Fed. Reg. at 19739, 19751. Notwithstanding this representation, by including GHGs and HAPs in the definition of “air pollutant,” BOEM would subject GHGs and HAPs to the proposed rule’s regulatory requirements, even though these types of emissions are clearly unrelated to the attainment or maintenance of the onshore NAAQS. Such inclusion, therefore, is beyond the purview of section 5(a)(8) and is impermissible.⁶

⁵ The fact BOEM’s current regulation at 30 C.F.R. § 550.303(f) regulates VOCs in the identical impermissible manner is irrelevant. BOEM must correct its previous mistake, and it must do so in accordance with OCSLA. To do otherwise would clearly violate the Administrative Procedure Act (“APA”), 5 U.S.C. § 706, which prohibits agencies from promulgating rules that are arbitrary, capricious, or otherwise not in accordance with law.

⁶ BOEM suggests that requiring submission of GHG information and potentially regulating GHG emissions would reduce ocean acidification and reduce the effects of climate change. See 80 Fed. Reg. at 19751. These matters are simply beyond the scope of BOEM’s regulatory authority under OCSLA section 5(a)(8). See, e.g., 1978 U.S.C.C.A.N. at 1684 (“...the Secretary of the Interior shall, with appropriate regulations, assure that offshore operations conducted pursuant to [OCSLA] do not prevent the attainment of [] State [ambient air quality] standards, if the air quality of that State is significantly affected by such offshore operations”). Moreover, Congress clarified that section 5(a)(8) of OCSLA was *not* intended to protect offshore resources. See *id.* at 1864-65 (explaining that “[t]he conferees intent was that the regulations promulgated by the Secretary not generally require that the air mass above the OCS itself be brought into compliance with national or State ambient air quality standards but that regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area”).

BOEM incorrectly assumes that section 5(a)(8) authorizes it to compel lessees to incur the time and expense to collect, maintain, and disclose to BOEM information relating to GHG and general air pollutant emissions. See, e.g., Proposed § 550.187 (requiring lessees and operators to collect, maintain, and report “information regarding *all air pollutant emissions* from all emission sources associated with [OCS] operations”) (emphasis added); see also 81 Fed. Reg. at 19722, 19747, 19750 (discussing same). More specifically, proposed section 550.187 would codify and make mandatory the existing Gulf of Mexico Region (GOMR) mechanism for reporting ongoing emissions under the Gulf-wide Offshore Activities Data System (GOADS), as provided for in BOEM Notice to Lessees and Operators (NTL) No. 2014-G01, which provides for the collection of GHG and HAP information from operators that voluntarily submit it.⁷ Similarly, under proposed section 550.303, BOEM would establish “the rate of projected emissions, calculated for each *air pollutant*, above which facilities would be subject to the requirement to perform modeling,” and require lessees and operators to calculate, report, and compare projected emissions of pollutants for the purpose of determining whether modeling is required. In addition, proposed section 550.303(d) would require lessees and operators to account for, consolidate, and model all “air pollutant emissions” from multiple facilities. Because BOEM proposes to include GHGs and HAPs in the definition of “air pollutant,” all of the requirements discussed above would apply to GHGs and HAPs even though they are unrelated to the attainment and maintenance of the NAAQS.⁸ BOEM cites no authority for its inclusion of GHGs and HAPs, and OCSLA does not grant it any.^{9, 10}

BOEM suggests that requiring lessees and operators to submit GHG and HAP emissions information will assist in the preparation of future environmental reviews under the National

⁷ Although NTLs interpret and clarify existing rules, they cannot impose new regulatory requirements. Previous BOEM attempts to use NTLs to impose substantive new requirements have failed. See, e.g., *Ensco Offshore Co. v. Salazar*, No. 10-1941, 2010 WL 4116892, at *5 (E.D. La. Oct. 19, 2010) (invalidating NTL No. 2010-N05 because it was a substantive rule masquerading as interpretative guidance that was not promulgated in accordance with APA notice-and-comment procedures). This line of cases makes clear that APA rulemaking would be required to make GOADS reporting mandatory.

⁸ The mere fact that industry has, in certain instances, voluntarily complied with BOEM requests for HAP and GHG emissions information, does not grant BOEM the authority to compel industry to gather and produce such information, or to penalize lessees for refusing to submit such information.

⁹ Although other OCSLA provisions impose on BOEM certain responsibilities and authorities, none authorize the requirements BOEM is now seeking to impose. See, e.g., 43 U.S.C. § 1344(a) (requiring BOEM to take various information into account when developing each 5-year plan, but providing no independent authority to compel lessees to provide information for that purpose); *id.* at § 1346 (requiring BOEM to undertake various studies, but providing no independent authority to compel lessees to gather and produce information to support those efforts); *id.* at § 1348 (requiring lessees to maintain safe workplaces, but providing no authority to compel lessees to gather and produce to BOEM information regarding HAP and GHG emissions).

¹⁰ Because black carbon is also not related to compliance with the NAAQS, BOEM similarly lacks the authority to regulate it, notwithstanding BOEM’s stated interest in doing so in the future. See 81 Fed. Reg. at 19724.

Environmental Policy Act (NEPA). NEPA does not grant BOEM the authority to impose information-gathering requirements on lessees and operators in the hopes that such information will be useful for future analyses or serve a public or governmental purpose. Instead, NEPA requires agencies to gather the environmental information necessary to make a reasoned choice among the alternatives when deciding whether, and under what conditions, to undertake a *specific* course of action (such as approving a project). It is well established that the purpose of NEPA is to inform agency decision making. 40 C.F.R. § 1500.1(c); *Pacific Legal Found. v. Andrus*, 657 F.2d 829, 837-38 (6th Cir. 1981) (although compliance with NEPA serves to inform policymakers and the public, “[t]his ... does not exist independent of the primary purpose to insure an informed decision by the agency contemplating federal action....[Informing policymakers and the public] is an added benefit derivative of the primary [decision making] purpose”).

With respect to NEPA analyses conducted for specific project approvals under OCSLA, HAP and GHG emissions information cannot influence BOEM’s decision-making. This is because BOEM’s decision space to approve Exploration Plans (EPs), Development and Production Plans (DPPs), and Development Operations Coordination Documents (DOCDs) under OCSLA is severely limited. For example, section 11(c) of OCSLA, *requires* BOEM to approve an EP if it complies with applicable regulations, including those “prescribed...pursuant to [OCSLA section 5(a)(8)].” 43 U.S.C. § 1340(c). Accordingly, if the EP complies with the section 5(a)(8) regulations, BOEM *must* approve it. Because section 5(a)(8) itself cannot be used to compel production of GHG or HAP emissions, and no other section of OCSLA, including the “general rulemaking” provisions of section 5(a), can be used to compel disclosure of such information, BOEM lacks the authority to disapprove an EP for failure to produce HAP or GHG emissions information. BOEM similarly lacks the authority to condition approval of an EP based on the lessee controlling or reducing HAP or GHG emissions associated with the plan. Simply put, OCSLA *requires* BOEM to approve an otherwise compliant plan, regardless of the associated HAP or GHG emissions, and leaves no room for BOEM to consider HAPs and GHGs in deciding whether to approve, approve with modifications, or deny EPs, DPPs, and DOCDs.¹¹ Given this constrained decision space, BOEM has no obligation under NEPA to consider HAP or GHG emissions when deciding to approve, approve with modifications, or deny a plan. See, e.g., *DOT v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (“Since [the Federal Motor Carrier Safety Administration (“FMCSA”)] has no ability categorically to prevent the cross-border operations of Mexican motor carriers, the environmental impact of the cross-border operations would have no effect on FMCSA’s decisionmaking—FMCSA simply lacks the power to act on whatever information might be contained in the EIS”); *Alaska Wilderness League v. Jewell*, 788 F.3d 1212 (9th Cir. 2015) (agencies need not comply with NEPA when their discretionary decision space is constrained by statute); cf. *DOT*, 541 U.S. at 768 (noting that a “rule of reason” is inherent in NEPA and its implementing regulations, “which ensures that agencies determine whether and to what extent to prepare an EIS based on the usefulness of ... information to the decisionmaking

¹¹ Under OCSLA, BOEM may disapprove an otherwise compliant plan, *i.e.*, one that complies with section 5(a)(8), *only* if approving the plan would constitute such a threat to the human or marine environment, or to national security, that cancellation of the underlying lease would be necessary. See 43 U.S.C. § 1334(a)(2)(A). The HAPs or GHGs emissions associated with a plan could not create such a situation.

process") (emphasis added). Accordingly, BOEM has no authority to compel lessees to produce such information.

In sum, section 5(a)(8) does not authorize BOEM to require lessees to gather and disclose GHG or HAPs emissions information to the agency, and BOEM has not cited any authority that would permit it to do so. Consequently, BOEM should remove from the proposal any provision requiring lessees to obtain, analyze, report, or control emissions of HAPs and GHGs.

1.2.4 BOEM cannot regulate emissions from mobile support craft, which are outside the scope of BOEM's jurisdiction, by "attributing" these emissions to OCS facility emissions.

Proposed section 550.302 includes mobile support craft (MSC), including vessels, in the definition of "facility." Thus, as drafted, the proposed rule would impermissibly force applicants to account for MSC emissions and subject MSC emissions to direct BOEM regulation.

Additionally, proposed sections 550.205(d) and (e) and 550.224(b) would impermissibly "attribute" MSC emissions to the emissions of a facility, presumably regulating the emissions of platforms to offset the emissions of "associated" MSC even though neither section (5)(a)(8), nor the other requirements of OCSLA, apply to MSC.

The scope of BOEM's authority prevents it from directly regulating MSC emissions or attributing MSC emissions to OCS facilities. First, under section 5(a)(8), BOEM cannot consider MSC emissions when determining whether "*activities authorized under [OCSLA]* significantly affect the air quality of [a] [s]tate" because MSC are not "*activities authorized under [OCSLA]*." This is true even though MSC are included in the plans submitted for BOEM approval, because BOEM does not approve, regulate, or otherwise authorize them.¹² Second, section 4(a) of OCSLA further limits the Secretary's regulatory authority to "artificial islands... and ... installations... permanently or temporarily attached to the seabed, which may be erected thereon

¹² For example, icebreakers, support vessels, crew boats, and aircraft are free to traverse the waters and air above the OCS without any authorization or permission from BOEM. Even mobile offshore drilling units ("MODUs") may travel where they wish without authorization from BOEM. At the same time, however, no person may drill for oil and gas in the OCS without BOEM authorization. 43 U.S.C. § 1340. Similarly, the construction, installation, and operation of an OCS facility also requires BOEM authorization. So for example, while regulations promulgated under section 5(a)(a) of OCSLA apply to a MODU's emissions while it is engaged in drilling in the OCS under BOEM authorization, they do not apply to that MODU while it is underway.

Aircraft or other MSC are simply outside the purview of section 5(a)(8) of OCSLA, because they require no authorization or permission from BOEM to do anything. Even while on an OCS production platform, for example, they can neither be regulated as facilities nor included in emissions calculations under section 5(a)(8) unless they are performing an activity specifically authorized by BOEM. Thus, BOEM should remove all provisions from the proposed rule that would account for the emissions of aircraft or the operation of onshore facilities, which are clearly not "*activities authorized under [OCSLA]*." See Proposed §§ 550.205(m), 550.224(b), 550.225(b), and 550.304(f).

for the purpose of exploring for, developing, or producing resources therefrom.” 43 U.S.C. § 1333(a). MSC are clearly not “artificial islands . . . permanently or temporarily attached to the seabed” that are “exploring for, developing, or producing” oil and gas.¹³ So BOEM’s regulatory authority cannot extend to MSC because they are not “permanently or temporarily attached to the seabed” for the purpose of “exploring for developing, or producing” oil and gas. See *also REDOIL v. EPA*, 716 F.3d 1155 (9th Cir. 2013) (support vessels that are not “[p]ermanently or temporarily attached to the seabed,” or “[p]hysically attached to an OCS facility,” are not “regulated or authorized under [OCSLA]”).

The OCSLA legislative history supports the exclusion of MSC emissions from BOEM’s regulatory authority. The Conference Report accompanying the 1978 OCSLA amendments only contemplates regulating emissions from OCS installations and platforms under section 5(a)(8), and does not indicate any concern for the emissions from vessels or anything other than “authorized” installations and platforms:

The conferees [sic] intent was that the regulations promulgated by the Secretary not generally require that the air mass above the OCS itself be brought into compliance with the [NAAQS] but that regulations might be appropriate for the air above or near an artificial installation or other device (platform), so that emissions from such source is controlled to prevent a significant effect on the air quality of an adjacent onshore area.

1978 U.S.C.C.A.N. at 1684-1685 (emphasis added). Consistent with the jurisdictional scope of section 4(a) of OCSLA, the report does not consider assessing or controlling emissions from any source other than an installation or platform.

BOEM should therefore modify the definition of “facility” as follows to exclude MSC from BOEM’s regulatory purview (the underlined text reflects proposed additions while the strikethrough text represents proposed deletions), and to clarify that the air quality review applies only to activities under its jurisdiction:

§ 550.302 *Acronyms and definitions concerning air quality.*

... Facility means, any installation, structure, ~~vessel, vehicle,~~ equipment, or device that is temporarily or permanently attached to the seabed of the OCS for the purpose of exploring for, developing, or producing oil or gas or sulphur therefrom, and which emits a regulated criteria or precursor pollutant, including but not limited to a dynamically positioned ship, gravity-based structure, manmade island, or bottom-sitting structure,

¹³ As particularly relevant here, Congress expressly excluded one type of MSC – vessels – from OCSLA’s purview. See 43 U.S.C. §§ 1332 (1)-(2) (“the subsoil and seabed of the [OCS] appertain to the United States and are subject to its jurisdiction and control...[OCSLA] shall be construed in such a manner that the character of the waters above...[are] high seas, and the right to navigation...therein shall not be affected”); *id.* at § 1333(a)(1) (extending the jurisdiction of the U.S., through OCSLA, to “such installation or other device (*other than a ship or vessel*) [attached to the seabed] for the purpose of transporting [oil and gas] resources”) (emphasis added).

whether used for the exploration, development, production or transportation of oil, gas, or sulphur. All Installations, structures, ~~vessels, vehicles~~ equipment, or devices directly associated with ~~the construction, installation, and implementation of a~~ the facility are a part of a facility only while located at the same site, attached, or interconnected by one or more bridges or walkways, or while dependent on, or affecting the processes of, the facility, including any ROV attached to the facility. One facility may include multiple drill rigs, drilling units, ~~vessels, platforms, installations, devices, and pieces of equipment.~~ Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the “tender assist” mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels, while temporarily or permanently attached to the seabed and exploring for, developing, or producing oil and gas or sulphur resources. Facilities also include ~~all~~ Floating Production Systems (FPSs), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars-, while temporarily or permanently attached to the seabed. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. ~~Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.~~

1.2.5 The proposal impermissibly assesses emissions impacts at the seaward boundary of states rather than at the shoreline.

Proposed section 550.205(i) would relocate from the state shoreline to the seaward edge of state territorial waters the “compliance boundary” that is used for determining exemptions from detailed analyses, the need for modeling, the significance of air impacts, whether emissions cause or contribute to a violation of the NAAQS, and the need for ERM. See 81 Fed. Reg. at 19738-19740, 19794. Although a state’s territory extends to its seaward boundary, this is not the appropriate point at which to assess air-quality impacts for a number of reasons.

First, as discussed, under section 5(a)(8) the Secretary’s authority is limited to promulgating regulations for “*compliance with the [NAAQS] pursuant to the [CAA] to the extent that activities authorized under [OCSLA] significantly affect the air quality of any State.*” (emphasis added). Under the relevant state implementation plans (SIPs) (the vehicles through which states must demonstrate how they will achieve and maintain compliance with the NAAQS), the border of the air quality control regions (AQCR) appears to extend only to the shoreline and not to the respective states’ territorial waters. As such, NAAQS do not apply in the territorial waters. Using the seaward boundary of the territorial waters as the point for determining NAAQS compliance under section 5(a)(8) therefore is inconsistent with BOEM’s statutory authority.¹⁴

¹⁴ In contrast, Texas appears to apply Title V federal operating permit requirements to stationary sources in its territorial waters. See Title V Program Applicability, http://www.tceq.state.tx.us/permitting/air/titlev/pro_applicability.html (“The 30 TAC Chapter 122 requirements also apply to stationary sources in the State of Texas territorial waters.”). However, obtaining a Title V federal operating permit is not relevant to OCSLA section 5(a)(8) because it is distinct from NAAQS compliance.

Second, when enacting section 5(a)(8), Congress clearly was concerned only with impacts to *onshore* air quality. For example, the legislative history states:

The standards of applicability the conferees intended...is that when a determination is made that offshore operations may have or are having a significant effect on the air quality of an adjacent onshore area, and may prevent or are preventing the attainment of the ambient air quality standards of such area, regulations are to be promulgated to assure that offshore operations conducted pursuant to this act do not prevent the attainment or maintenance of those standards....The conferees intent was that...regulations might be appropriate for the air above or near an artificial or other device (platform), so that emissions from such source is [sic] controlled to prevent a significant effect on the air quality of an adjacent onshore area.

1978 U.S.C.C.A.N. at 1684-1685.

Third, BOEM itself recently acknowledged that because the NAAQS are intended to protect human health, BOEM is only concerned with the onshore impacts of OCS activities. See BOEM 2017-2022 Draft Multisale EIS at xvii (“Since the primary NAAQS are designed to protect human health, BOEM focuses on the impact of these activities on the States, where there are permanent human populations”). Here, however, BOEM proposes to assess air quality impacts of OCS activities at the seaward edge of the state’s territorial waters even though there are no “permanent human populations” in such areas. BOEM’s proposal is therefore inconsistent with the purpose of the NAAQS, as expressly acknowledged by BOEM.

Finally, BOEM’s proposal to use the seaward boundary of the states’ territorial waters to assess air quality impacts of OCS activities is arbitrary because the geographic extent of states’ territorial waters is not uniform. Texas’ territorial waters, for example, extend 9 nautical miles (nmi) seaward from shore, while Louisiana’s territorial waters only extend 3 nmi. BOEM does not offer any legally defensible rationale, based on NAAQS compliance or otherwise, for its proposal to assess OCS emission impacts in some places at 3 nmi from shore and in other places at 9 nmi from shore.

For all of these reasons, the point at which OCS air impacts are assessed must be the shoreline and not the state seaward boundary.

1.2.6 BOEM’s proposal to enforce compliance with federal, state, or tribal laws related to air quality exceeds the agency’s authority.

Proposed section 550.313(a)(6) would allow BOEM to impose “additional requirements on facilities operating under already approved plans” if the “operation is violating any applicable federal, State, or tribal law related to air quality.” However, BOEM lacks the authority to enforce any air quality-related laws that are not designed to ensure compliance with the NAAQS, e.g., those laws intended to regulate HAPs, GHGs, odors, noise, nuisance, and other air quality-

related values (AQRVs).¹⁵ Because of this lack of authority, BOEM cannot impose on any OCS facility “additional requirements” unrelated to compliance with the NAAQS.

1.2.7 BOEM lacks a legal justification for including other “Federal Land Managers” in determining compliance with section 5(a)(8) or for requiring additional information and analysis in response to their concerns.

Because OCSLA authorizes BOEM to regulate OCS activities only for compliance with the NAAQS, BOEM cannot regulate “significant” air quality impacts in and of themselves. Yet, section 550.303(h) proposes to do precisely that by providing federal land managers (FLMs) an open-ended invitation to raise issues, require studies, and require mitigation of air impacts on AQRVs in sensitive onshore areas managed by FLMs. See 81 Fed. Reg. at 19775. BOEM, however, fails to provide a sufficient nexus between AQRV protection and NAAQS compliance to justify this proposed requirement. The CAA charges FLMs with the separate and distinct obligation to protect AQRVs within their respective CAA jurisdictions. OCSLA did not grant FLMs any authority over OCS emissions, and it did not authorize BOEM to use its section 5(a)(8) authority as a means of protecting AQRVs that are of concern to FLMs.¹⁶ Accordingly, BOEM should remove those portions of proposed section 550.303(h) from the final rule that would involve FLMs in determining compliance with section 5(a)(8) of OCSLA or that would allow BOEM to impose any non-OCSLA related requirement on lessees at the behest of FLMs.

1.3 BOEM may not use its limited regulatory authority over air emissions to reconsider already approved plans, or to impose new requirements on existing facilities.

1.3.1 The proposal should not require ongoing emissions monitoring and reporting to ensure continued compliance with the air quality regulations, and should not impose new air quality requirements in the absence of a plan review.

Proposed sections 550.309(d), 550.311, 550.312, and 550.313 require ongoing emissions reporting to ensure continued compliance with regulations promulgated under OCSLA section 5(a)(8). This is inconsistent with congressional intent, as it would impose new requirements on an already-approved plan. Congress intended that the regulations promulgated under section 5(a)(8) would only apply at the plan approval stage. See, e.g., 43 U.S.C. § 1340(c)(1) (requiring approval of an EP if the applicant complies with regulations promulgated under OCSLA section 5(a)(8)); *id.* at § 1351(h)(1) (allowing approval of a DOCD only if the applicant complies with regulations promulgated under OCSLA section 5(a)(8)); 78 U.S.C.C.A.N. at 1685 (“exploration plans... and development and production plans ... are to comply with any regulations promulgated pursuant to section 5(a)(8) of [OCSLA] ... *Thus, in considering approval,*

¹⁵ AQRVs are a key component of Class I prevention of significant deterioration (PSD) reviews under the CAA, which are clearly beyond the purview of BOEM’s authority to regulate for compliance with the NAAQS.

¹⁶ FLMs have no place in determining whether OCS operations comply with BOEM’s section 5(a)(8) regulations. Although they might have special “expertise” to evaluate the impacts of emissions on AQRVs in the areas they manage (81 Fed. Reg. at 19775), this is not relevant for the purpose of section 5(a)(8) compliance.

modifications, and disapproval of a submitted exploration plan or development and production plan, the Secretary is to insure compliance with any applicable regulations promulgated...pursuant to section 5(a)(8)” (emphasis added). BOEM’s proposal to use its section 5(a)(8) authority to require ongoing emissions monitoring and reporting, and to impose new emission requirements even when a new plan has not been submitted, exceeds the scope of BOEM’s authority to ensure compliance with the NAAQS under OCSLA section 5(a)(8).

1.3.2 The requirement to resubmit and obtain re-approval of previously approved plans is problematic and presents potential breach of contract and takings issues.

Proposed section 550.310(c) would require lessees to resubmit previously approved plans at least every 10 years to verify compliance with BOEM’s current air quality regulations, including those provisions relating to new information gathering and reporting requirements. *See also* proposed rule §§ 550.284; 550.303(g); 550.309(d).¹⁷

The requirement to resubmit plans every 10 years is inconsistent with section 25(h)(3) of OCSLA, which indicates that BOEM can only review an existing plan “based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan.” 43 U.S.C. § 1351(h)(3). BOEM lacks the authority to require resubmission or revision of an already-approved plan, absent some indication of changed conditions or impacts. It follows, therefore, that BOEM may not promulgate a regulation imposing a blanket requirement that all operators periodically resubmit their plans for review unless there is a specific showing that each resubmitted plan warrants review because there have been changed conditions or impacts. Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone cannot possibly constitute grounds for resubmission and re-approval, on new and far more onerous terms, of existing DPPs and DOCDs. Accordingly, BOEM may not require resubmission and re-approval of existing plans as proposed.¹⁸

¹⁷ Although BOEM does not specify the consequence that will follow if BOEM is dissatisfied with the resubmitted plan, the proposal suggests that failure to resubmit a plan could result in revocation of the lessee’s existing plan. Moreover, the criteria for revoking an existing plan are unclear. Under OCSLA, the standard for *disapproving* a plan application is the same as for lease *cancellation*. The threshold for plan *revocation* should be at least as high. OCSLA permits lease cancellation only in the narrowest and most extreme circumstances. *See, e.g.*, 43 U.S.C. § 1334(a)(2) (requiring a showing of imminent and “serious harm” to life, property, national security, or the marine, coastal or human environment, and requiring a hearing, suspension period, and compensation, prior to cancelling a producing lease). It is doubtful that emissions from existing facilities, much less reduced emissions from future facilities, can ever present such an imminent threat.

¹⁸ Indeed, it appears that BOEM is attempting to leverage its authority to review plans and cancel leases under OCSLA to coerce lessees into providing scientific information that is unrelated to OCSLA

Although finalizing this plan resubmission requirement would be arbitrary and capricious, if BOEM nonetheless included such a requirement in the final rule, then at a minimum, it should clarify that: (1) the resubmitted plan will be reviewed for continued compliance with onshore NAAQS, and (2) additional conditions will be imposed only where operations are “significantly” affecting the air quality of a state and preventing attainment or continued compliance with the NAAQS onshore.

1.4 Proposed § 550.303(d) improperly requires aggregation of emissions across “proximate” facilities with common partial ownership or control, and which are contemporaneously operated.

BOEM is inappropriately attempting to transpose to the OCS EPA’s Title V and New Source Review onshore permit programs, under which two or more stationary sources may be treated as a single stationary source for emission aggregation purposes, if, among other things, they are under common ownership or control and are “contiguous and adjacent.”¹⁹ First, BOEM’s proposal is inconsistent with OCLSA because the CAA does not apply to OCS areas that are subject to section 5(a)(8). Second, BOEM’s proposal in this regard reflects a fundamental misunderstanding of OCS lease ownership and operations.

As an initial matter, there is no basis for BOEM’s tacit assumption that “common” ownership equates with “common” control on the OCS. *Cf. U.S. v. Bestfoods*, 118 S. Ct. 1876 (1998). A cursory review of a BOEM serial register page for a lease block demonstrates that OCS leases frequently have numerous fractional interest owners, including both record title and operating rights owners, with varying degrees of control (or no control at all) over operations. Imposing coordinated and interrelated air-quality responsibilities on two or more proximately located facilities, even if the leases on which they are located share one or some common record title or operating rights holders, is arbitrary and unfair because owners without the power to ensure compliance with the “aggregated” air quality responsibilities could nevertheless be held liable for noncompliance.²⁰ Because holding non-common or non-controlling interest owners responsible

compliance (e.g., as GHG, HAP, and other information reporting requirements). In essence, BOEM is telling lessees that wish to continue operating on the OCS that they can do so *only* if they also submit to participation in an independent and unrelated program for acquiring, analyzing, and disclosing emissions information and reducing air pollution from various sources that far exceeds that authorized under OCSLA. BOEM may not engage in such coercive behavior. *Cf. NFIB v. Sebelius*, 132 S. Ct. 2566, 2602-2607 (establishing the “anti-leveraging principle” and holding that federal imposition of new conditions constitutes impermissible coercion when the conditions “take the form of threats to terminate other significant independent grants”).

¹⁹ *Cf. Summit Petroleum Corp. v. EPA*, 690 F.3d 733 (6th Cir. 2012) (vacating EPA’s single source determination and holding that the term “adjacent” unambiguously refers to physical proximity, and that EPA’s interpretation that a natural gas sweetening plant and various sour gas production wells located across an area of approximately 43 miles were a single source because there were “adjacent” was unreasonably inconsistent with the plain meaning of that term).

²⁰ To illustrate, under the proposal’s vague provisions, a person who holds a 5 percent non-controlling

for the regulatory compliance of all aggregated leases raises serious due process and confidentiality concerns in addition to basic practicability concerns, BOEM should withdraw proposed section 550.303(d), and reconsider its proposal to aggregate OCS leases simply on the basis of “common ownership and control.”

Additionally, “contemporaneous operation” of proximate leases cannot be used as a trigger for the imposition of new emissions reporting or mitigation requirements under section 5(a)(8). Only the submission of an EP or DPP/DOCD (or arguably the periodic review of a DPP/DOCD), can trigger BOEM’s section 5(a)(8) authority. See 43 U.S.C. §§ 1340, 1351.

1.5 BOEM’s proposal to grant itself or other agencies unlimited discretion to dictate future requirements on an ad-hoc basis and to disregard its self-imposed requirements violates the APA.

1.5.1 Proposed §§ 550.308 and 550.313 would allow BOEM to sidestep the entire regulatory process established in the proposed rule and arbitrarily impose regulatory requirements in excess of its section 5(a)(8) of OCSLA authority.

BOEM proposes to allow the Regional Supervisor to require a lessee or operator to apply “additional [emission reduction measures, (ERMs)] on either a temporary or permanent basis, depending on the circumstances, if he/she determines that projected emissions, or where applicable[,] complex total emissions, may cause or contribute to a violation of a NAAQS.” Proposed rule § 550.308(a). The very purpose of the proposed rule is to establish a carefully-crafted, scientifically defensible, reasonably implementable system for determining whether project emissions may cause or contribute to a violation of the NAAQS, and, if so, which ERMs should be imposed. Including a provision that would allow the Regional Supervisor to simply

interest in lease A and a 5 percent non-controlling interest in lease B could be held liable for compliance (or noncompliance) with the proposal’s emissions and reporting requirements for *both leases*. More importantly, *all* of the remaining 95 percent interest owners in each lease would *also* be held liable for the compliance of *both leases, even if they only have an interest in one of them*. This is because the 5 percent “common” owner could provide grounds for aggregation under the “common ownership or control” provision of the proposed rule.

It is also possible that each lease has a different operator, which adds further complexity, since operators of one lease are usually contractually obligated to keep information about the lease confidential from owners of other leases. While on the one hand everyone who will be held responsible for the lease A’s compliance should have access to the relevant compliance information for that lease, those that only have ownership interest in lease B are not entitled to any information concerning lease A, much less the ability to control what happens on lease A.

Aggregating three or more leases would increase the complexity exponentially. BOEM has failed to consider these issues, and it does not explain how these obvious concerns would be resolved in the context of the proposed rule.

ignore the entire proposed regulatory scheme, make his or her own NAAQS compliance determination, and impose his or her own emission controls at will, is plainly arbitrary.²¹

Proposed section 550.313 is also flawed for many other reasons. First, that provision would allow BOEM to unilaterally “impose additional air quality requirements on facilities operating under already approved plans” if BOEM determines, *inter alia*, that the operation is emitting “unauthorized pollutants,” “creating conditions posing an unreasonable risk to public health or welfare,” or “violating any applicable federal, State, or tribal law related to air quality.” Although it is unclear what “unauthorized pollutant” means, as discussed above, under section 5(a)(8) BOEM may only regulate criteria pollutants that cause or contribute to nonattainment of the NAAQS. Proposed section 550.313 is also unacceptably vague because it fails to explain what would constitute emissions of pollutants sufficient to present an “unreasonable risk to public health and welfare.” Again, section 5(a)(8) only addresses compliance with the NAAQS and does not grant BOEM overarching authority to generally “protect public health and welfare” (in fact, that is what the NAAQS are for) or to ensure compliance with air quality laws in general.

In addition, proposed section 550.313 conflicts with proposed section 550.303(d), which limits facility aggregation to “proximate” facilities with “common ownership.” Proposed section 550.313 would instead permit aggregation with “any offshore operation” regardless of proximity, ownership, or control, rendering proposed section 550.303(d) superfluous. (emphasis added). Additionally, because Congress intended that the regulations promulgated under section 5(a)(8) apply only at the plan review and approval stage, BOEM may not simply impose new “air quality” requirements (even if it had the authority to do so, which, as discussed above, it does not) on facilities operating under an already-approved plan. Consequently, BOEM should remove proposed sections 550.308 and 550.313 from the final rule.

1.5.2 Proposed § 550.312 inappropriately authorizes BOEM to impose meteorological data gathering and reporting requirements at its discretion.

Proposed section 550.312(c) would require lessees to submit meteorological data “for a period of time and in a manner approved or prescribed” by the Regional Supervisor. This proposed provision fails to inform the regulated community what is required of it and proposes to allow the agency to simply make up the rules as it goes along. BOEM may not reserve such broad discretion to dictate future requirements on an ad-hoc basis.

All regulations must be sufficiently clear and specific so the regulated community has “fair notice” of the regulatory requirements. *FCC v. Fox Television Stations, Inc.*, 132 S. Ct. 2307, 2309 (2012); *see also id.* at 2317-18 (“A fundamental principle in our legal system is that laws which regulate persons or entities must give fair notice of conduct that is forbidden or required”); *Papachristou v. Jacksonville*, 405 U.S. 156, 162 (1972) (“Living under a rule of law entails various suppositions, one of which is that [all persons] are entitled to be informed as to what the

²¹ Although proposed section 550.308(b) allows lessees and operators to challenge the Regional Supervisor’s determinations, BOEM should clarify that section 550.308(b) does not preclude administrative appeal of the Regional Supervisor’s decision to the Interior Board of Land Appeals pursuant to 30 C.F.R. § 550.290.

State commands or forbids”) (quoting *Lanzetta v. New Jersey*, 306 U.S. 451, 453 (1939) (alteration in original).

The requirement that regulations be clear stems from the protections provided by the Due Process Clause of the Fifth Amendment, and leads courts to invalidate laws and regulations that are impermissibly vague. See, e.g., *Fox Television Stations*, 132 S. Ct. at 2317; *United States v. Williams*, 553 U.S. 285, 304 (2008). According to the Supreme Court: “The void for vagueness doctrine addresses at least two connected but discrete due process concerns: regulated parties should know what is required of them so they may act accordingly; and precision and guidance [in rulemaking] are necessary so that those enforcing the law do not act in an arbitrary or discriminatory way.” *Id.* Here, BOEM must propose the specific criteria for timing and content of data submissions and subject its proposal to the notice-and-comment rulemaking process under the Administrative Procedure Act (APA).

1.5.3 Proposed § 550.304(e) inadequately specifies the methods lessees must use when determining ambient air quality.

Proposed section 550.304(e) prescribes the methods lessees must use when estimating the quality of the ambient air in the area that may be impacted by their operations. The provisions of proposed section 550.304(e) are vague, nonspecific, and indicate that BOEM may in the future issue a NTL informing lessees how to conduct this critical analysis. Prescribing methods for estimating ambient air quality is a quasi-legislative exercise that may only be effectuated via APA notice-and-comment rulemaking. NTLs are not rules, and BOEM may not use them to impose substantive or binding requirements on lessees. See *EnSCO Offshore Co. v. Salazar*, No. 10-1941, 2010 U. Dist. LEXIS 111226, 2010 WL 4116892, *15-17 (E.D. La. Oct. 19, 2010). Accordingly, to the extent BOEM declines to adopt states’ or EPA’s existing assessments of onshore ambient air quality, BOEM may only prescribe methods for lessee estimation of ambient air quality through the APA rulemaking process.

1.5.4 Proposed § 550.312 would inappropriately allow other agencies to impose additional monitoring or reporting requirements at their discretion.

Section 550.312 appears to permit BOEM to authorize other agencies to impose additional monitoring or reporting requirements on operators or lessees. See 81 Fed. Reg. at 19785. However, BOEM may not delegate its OCSLA regulatory authority to other agencies, and may only impose air quality control and reporting requirements consistent with section 5(a)(8) of OCSLA.

1.5.5 The proposed rule’s reservation of discretion to BOEM to revise emission exemption thresholds for any reason, without expressly requiring additional rulemaking, presents APA concerns.

Revising the regulatory emissions thresholds is a quasi-legislative exercise because it imposes new standards that are binding on lessees and the agency. See *Gen. Motors Corp. v. Ruckelshaus*, 742 F.2d 1561, 1565 (D.C. Cir. 1984). Although the proposal indicates that BOEM would propose new thresholds and seek public comment before finalizing any future changes (see 81 Fed. Reg. at 19773), BOEM must engage in full APA notice-and-comment rulemaking before changing EETs. See 5 U.S.C. §§ 553, 706.

1.5.6 BOEM proposes to require measurement of actual emissions on facilities with emissions above “a specific threshold,” and requests comment on what that threshold should be in the final rule.

In the preamble BOEM proposes to require measurement of actual emissions on facilities with emissions above “a specific threshold,” and requests comment on that threshold. 80 Fed. Reg. at 19746. Establishing a threshold for requiring measurement of *actual emissions*, an exceedingly difficult, expensive, and burdensome proposition, is a critically-important quasi-legislative exercise. The threshold BOEM is considering must be proposed with sufficient specificity to facilitate meaningful stakeholder comment before finalization. To do otherwise would violate the APA, 5 U.S.C. § 553. Accordingly, BOEM must first propose a threshold for public comment before it can issue a final regulation.

1.6 The potentially perpetual recordkeeping requirement proposed § 550.205(j) imposes is unjustified.

Although proposed section 550.205(j) requires lessees to “maintain” records of any data or information “establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate their projected emissions,” it does not indicate how long these records must be maintained. 81 Fed. Reg. at 19759. BOEM may not impose a potentially interminable records retention requirement, and must propose a reasonable records retention period, such as five years or the life of the plan, whichever is less. *See Fox Television Stations, Inc.*, 132 S. Ct. at 2317-18; *Trinity Broad. of Fla., Inc. v. FCC*, 211 F.3d 618, 628 (D.C. Cir. 2000).

1.7 The proposed rule will impose new administrative burdens on BOEM that will impair its ability to timely process applications for plan approvals.

Pursuant to 30 C.F.R. § 550.231, BOEM only has fifteen days to deem complete an EP, and it only has thirty days thereafter to approve, disapprove, or approve the plan with modifications. Even if an operator or lessee were to submit a plan in full compliance with the proposed rule, it would be impossible for BOEM to review the voluminous amount of information (including data, emissions information, modeling, etc.) required under the proposed rule within the required timeframes. This is more than a problem of administrative efficiency. Requiring applicants to submit a volume of information that cannot be reviewed within the regulatory timeframe constitutes an impermissible violation by BOEM of its own regulations. Such a result is also contrary to Congress’ intent to ensure that compliance with section 5(a)(8) does not interfere with the timeframes established for plan review and approval. As stated in the legislative history:

The conferees do not intend that the application of section 5(a)(8) regulations will interfere with the time periods provided in the conference report for review and approval of exploration plans, and development and production plans. The conferees expect that these regulations will be implemented consistently with the timetables established by these amendments.

78 U.S.C.C.A.N. at 1685. Consequently, BOEM should only promulgate those regulations that are absolutely necessary to address the purported problem of onshore air quality and avoid

imposing excessive, expensive, and time-consuming administrative burdens on lessees and the agencies that do nothing to further Congressional goals.

1.8 BOEM’s cursory regulatory impact analyses and its non-compliance with executive orders underscore the arbitrary nature of the proposed rule.

Under the APA, a rule’s validity depends on the quality of analysis supporting the rule and whether the agency’s conclusion is rationally related to the facts in the record. *See, e.g., R.J. Reynolds Tobacco Co. v. FDA*, 696 F.3d 1205, 1220 (D.C. Cir. 2012), *overruled on other grounds by Am. Meat Inst. v. USDA*, 760 F.3d 18 (D.C. Cir. 2014) (examining FDA’s Regulatory Impact Analysis and noting that FDA lacked the evidence to support its decision); *see also Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 56 (1983) (explaining that the agency must articulate a “rational connection between facts and judgment required to pass muster under the arbitrary and capricious standard”). Here, BOEM has severely underestimated the regulatory impacts of its proposal. This, coupled with its noncompliance with various executive orders intended to ensure a reasoned decision-making process, undermines the validity of BOEM’s proposed rule.²²

²² For example, BOEM concluded that the proposal is “not a significant energy action” under E.O. 13211 (May 18, 2001). It also simultaneously concluded that, although the regulation is necessary to protect onshore air quality, the rule would have “minimal” impact on public health, safety, welfare and the environment under E.O. 1356, presumably because “OCS operations have a minimal impact on the air quality onshore.” Oil, Gas, and Sulphur Operations in the Outer Continental Shelf 30 CFR Part 550 – Proposed Subparts A, B, C and J, Environmental Assessment (March 2016) at 17. All these conclusions are internally inconsistent and undermine BOEM’s rationale for the proposed rule.

2 General Comments

2.1 OCSLA's mandate for BOEM differs from the CAA's mandate for EPA.

We acknowledge BOEM's intent to update its Air Quality Regulatory Program (AQRP) to reflect the EPA's current ambient air quality standards. However, many of the proposed rule provisions mirror those in EPA's industrial air quality permitting programs. EPA's programs are not appropriate for OCS sources and BOEM has no mandate to apply the EPA air programs.

The air quality programs of Interior and EPA are authorized by the 1978 OCSLA and the 1990 CAA, respectively. These Acts differ considerably:

- OCSLA recognizes that the OCS is a "vital national resource" and should be made available for development "subject to environmental safeguards." Interior's mandate under OCSLA, per the preamble to the 1980 rulemaking, is to "regulate OCS activities only if the emissions from the activities have significant effects on onshore air quality."
- The CAA main objective is to regulate air quality and establish standards (NAAQS) to protect human health and safety.

Although Section 328(b) of the CAA requires Interior to "consult with the [EPA] to assure coordination of air pollution control regulation for OCS emissions and emissions in adjacent onshore areas," its authorization to require pollution controls for OCS emissions is still constrained to OCS activities that will significantly affect air quality of a state for purposes of compliance with the NAAQS. This does not allow BOEM to adopt the extensive programs for air pollution control mandated under the CAA, and certainly does not mandate that BOEM adopt broader, more restrictive, or more onerous provisions based on EPA's regulations. Congress acknowledged that BOEM is not required to, and could not, recreate and administer EPA's programs offshore, yet BOEM has randomly selected a number of concepts from EPA's programs and attempts to apply these concepts even more broadly in this more limited context. This has resulted in a proposed rule of cobbled-together concepts that are not only unnecessary to achieve BOEM's mandate, but are not workable for the regulated community or BOEM in the offshore context. Just a few examples of these concepts are:

"Maximum projected emissions", which are akin to EPA's concept of Potential to Emit (PTE) (40 CFR 51.301). While EPA's program looks only at emissions from the stationary source, BOEM proposes a much broader scope that includes "attributed emissions" (emissions from mobile sources) and "consolidated emissions" (which amount to existing, background emissions).

"Attributed emissions" which echo EPA's concept of Secondary Emissions. Again, BOEM's approach is unnecessarily broader by including emissions from MSC and potentially aircraft. EPA, by definition, excludes mobile source emissions in 40 CFR 52.21(b)(18) from Secondary Emissions.

In developing its existing air quality regulatory program, Interior acknowledged that its program should be guided by EPA's program because of EPA's air quality expertise, but should differ because offshore conditions are not the same as those encountered onshore. In the preamble to the 1980 rulemaking, Interior wrote "all OCS sources are external to the areas whose air

quality they may affect, a situation not commonly encountered in EPA's regulatory program. Thus, the Department [Interior] has used only those aspects of EPA's program that are adaptable to the offshore situation.”

In the proposed rule, it appears that BOEM has selected concepts developed by EPA over decades of rulemaking and litigation that were intended to address a distinct mandate to control air pollution from stationary, onshore sources.

There is no compelling reason for additional regulation of OCS emissions. Interior developed an air quality regulatory program that has ensured that emissions from OCS sources do not significantly affect compliance with NAAQS at onshore locations, as discussed below. BOEM needs to conduct a thorough review of how these concepts can or should be implemented for the OCS or whether their application is even necessary to achieve BOEM's mandate.

2.2 BOEM cannot require plans to address air quality assessment criteria other than NAAQS.

A number of proposed rule sections require special consideration of Class I areas or Sensitive Class II areas, or consultation with Federally-recognized Indian tribes or FLMs. However, as discussed in Section 1.2.7, OCSLA authorizes BOEM to regulate OCS activities only for compliance with the NAAQS; BOEM cannot regulate “significant” air quality impacts in and of themselves. BOEM has not provided a sufficient nexus between “sensitive” areas protection and NAAQS compliance to justify these additional proposed requirements. Consequently, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed to the extent they are not directly related to compliance with NAAQS in onshore areas.

As discussed in Section 2.1, OCSLA's requirement for the Secretary of the Interior to consult with the EPA Administrator in the development of its air quality regulations does not require BOEM to adopt the extensive programs for air pollution control that apply to onshore sources under the CAA. In particular, EPA's Prevention of Significant Deterioration (PSD) program introduces a wide range of regulatory criteria that are unnecessary for BOEM to satisfy its mandate to ensure compliance with NAAQS. Consequently, we request that BOEM eliminate all references in the proposed rule to PSD increments and AQRVs (see Appendix A for suggested rule language in redline-strikeout format to assist in revised regulatory text). The criteria we propose to assess “whether activities authorized under [OCSLA] significantly affect the onshore air quality of any state” are presented in Chapter 9.

2.3 BOEM has not demonstrated that offshore activities significantly affect onshore air quality and prevent attainment or maintenance of NAAQS.

As discussed in Section 1.2.2, BOEM lacks the authority to regulate OCS emissions absent a finding that those emissions 1) “significantly” affect the air quality of a state; and (2) interfere with a state's ability to achieve or maintain compliance with the NAAQS. We have examined relevant SIPs, BOEM's own studies and NEPA analyses, and more than 90 modeling analyses in plan submittals and determined there has been no demonstration that OCS sources significantly affect the air quality of a state or a state's ability to comply with the NAAQS.

2.3.1 Review of State Implementation Plans.

SIPs are developed by states to provide a framework for attaining or maintaining their compliance with the NAAQS. Reviews of the existing SIPs for Alaska and states bordering the Gulf of Mexico (Texas, Louisiana, Mississippi, and Alabama) were conducted to determine whether and how they considered OCS emissions. The incorporation of OCS sources within the SIPs were identified as follows:

- The Houston-Galveston-Brazoria ozone SIP includes OCS sources in the attainment demonstrations but focuses the attainment strategy on local industrial sources and motor vehicle NO_x reductions, not on OCS sources.
- The Baton Rouge ozone SIP includes OCS sources in the attainment demonstrations, but the OCS sources were not considered a significant contributor to NAAQS violations. The area is currently proposed for attainment designation.
- The Louisiana sulphur dioxide (SO₂) SIP for St. Bernard parish does not include OCS sources or any other sources more than 20 km from the nonattainment area, and focuses solely on two local onshore industrial facilities to achieve attainment.

Individual state agencies for the affected states listed above were contacted to confirm the findings of the SIP reviews. According to the agencies, OCS-based contributions to onshore pollutant concentrations are small. In all cases, the SIPs indicate that the states responsible for achieving NAAQS compliance do not consider OCS sources to be significant contributors.

2.3.2 OCS NEPA analyses consistently conclude OCS sources do not have a significant effect on onshore air quality.

As discussed in Section 1.2.1, Congress added Section 328(b) to the CAA in 1990, directing the Secretary of the Interior to prepare a study assessing the impacts of OCS sources on ozone and NO₂ nonattainment areas and to consult with the EPA Administrator to determine if additional actions were necessary. The MMS published the Secretary of Interior's report in 1995, concluding that "the contribution of [OCS petroleum development] emission sources on onshore ozone concentrations is small."²³ Following the publication of this report, EPA and MMS did not pursue any further regulatory action to mitigate onshore air quality impacts from OCS sources. The 1995 study was the first of many conducted by Interior evaluating the effect of OCS emissions on onshore air quality.

NEPA documents prepared by MMS and its successor agency, BOEM, assessed whether air quality from OCS sources "significantly affect the air quality of any state." A review of these documents indicates that none of them demonstrated that OCS activities endanger onshore air quality. A list of the reviewed documents and their conclusions is provided below:

- BOEM's Final Programmatic EIS (PEIS) was published in 2012 and addressed the 2012-2017 OCS oil and gas leasing program in the Gulf of Mexico. The 2012-2017 PEIS assesses NO₂, SO₂, particulate matter less than or equal to 2.5 micrometers in diameter (PM_{2.5}), particulate matter less than or equal to 10 micrometers in diameter PM₁₀, carbon

²³ Minerals Management Service, Gulf of Mexico Air Quality Study, Final Report, Volume I, 1995, at <http://www.gomr.boemre.gov/PI/PDFImages/ESPIS/3/3424.pdf>

monoxide (CO), and ozone impacts and concludes that emissions due to the oil and gas leasing program would not result in any exceedance of the NAAQS for these pollutants.

→ The 2012-2017 PEIS included photochemical modeling studies indicating extremely small contributions from existing offshore operations to ozone concentrations at onshore areas where the 75 ppb NAAQS is exceeded. The projected emissions from the 2012-2017 proposed activities were similar to the emissions used in the modelling studies, and the onshore emissions in the nonattainment areas were expected to decrease. As a result, BOEM determined the proposed leasing program would not significantly impact onshore ozone concentrations and that the cumulative impact to ozone nonattainment areas would likely be reduced. These same photochemical modelling results are repeated in BOEM's 2016 Draft Multisale EIS for the 2017-2022 leasing program in the Gulf of Mexico.

- BOEM's Multisale EIS for the 2012-2017 leasing program in the Western and Central Planning Areas of the Gulf of Mexico concluded that each lease sale would have minimal impact to onshore air quality. As required by NEPA, BOEM subsequently reassessed the conclusions of this EIS for each individual lease sale and reaffirmed its original conclusion each time.
- The 2014-2016 Western Planning Area Lease Sale EIS found that "emissions of pollutants into the atmosphere from the routine and accidental activities associated with a WPA [Western Planning Area] proposed action are projected to have minimal impacts to onshore air quality, and emissions of pollutants into the atmosphere from activities associated with the OCS Program are also not projected to have significant effects on onshore air quality."
- The 2015-2017 Central Planning Area Lease Sale EIS found that "emissions of pollutants into the atmosphere from activities associated with the OCS Program are not projected to have significant effects on onshore air quality because of the prevailing atmospheric conditions, emission rates and heights, and the resulting pollutant concentrations."
- BOEM's 2015 Final Second Supplemental EIS for Lease Sale 193 in the U.S. Chukchi Sea evaluated air quality impacts throughout the exploration, development, and production period, concluding that impacts would range from negligible to minor over 77 years. MMS's 2008 Draft EIS for lease sales in the U.S. Beaufort Sea also concluded that air quality impacts would be low.
- The Draft PEIS for BOEM's 2017-2022 leasing program concludes that the direct program will result in minor contributions to criteria pollutant concentrations, that the NAAQS will not be violated, and that the PSD increments will not be exceeded.
- In addition to the NEPA documents discussed above, we reviewed twenty-four EISs and Environmental Assessments published by BOEM (and formerly the MMS) between 2002 and 2015 addressing oil and gas lease sales in the Gulf of Mexico region. None of these documents conclude that oil and gas activities have the potential to endanger onshore air quality.

Outside of the impacts identified by the NEPA documents, BOEM goes further and reiterates over multiple documents that the existing regulations are sufficient. For example, BOEM's 2012-2017 Multisale EIS specifically states that existing regulations are sufficient to prevent adverse onshore air quality impacts (see section 4.1.1.1.2 of the EIS):

Regulations, activity data reporting via the [Gulfwide Offshore Activity Data System] reporting requirement, and mitigation, such as monitoring the performance of the catalytic converter, would ensure [pollutant concentrations] stay within the NAAQS.

The conclusion that existing regulations are sufficient to protect onshore air quality attainment is reiterated in BOEM's 2017-2022 Draft Programmatic EIS:

BOEM and USEPA regulations require mitigations to prevent or reduce impacts in areas defined as nonattainment by USEPA. For operations that do not demonstrate the potential to impact attainment status, existing methods of regulating pollutants by the USEPA and BOEM are expected to maintain USEPA defined attainment statuses. These existing regulations will also prevent the deterioration of air quality in nearby Class I Areas and reduce impacts to Sensitive Class II Areas from oil and gas development.

This long list of BOEM assertions that OCS sources do not significantly affect onshore air quality is offered yet again in the NEPA Environmental Assessment for BOEM's proposed air quality rule.²⁴ On page 17, addressing the No Action Alternative, BOEM states:

There is the potential that OCS emissions affect ozone in the Greater Houston area. On the whole, however, OCS operations have a minimal impact on the air quality onshore.

As indicated above, OCS emissions have modeled onshore impacts in the Houston-Galveston-Brazoria area that constitute a small fraction of the overall ambient ozone concentrations where the associated 8-hr NAAQS is exceeded. However, this does not mean that new regulations for OCS emissions are a necessary measure to prevent ozone exceedances in the Houston area. The Houston-Galveston-Brazoria SIP, most recently updated in 2010, does not identify offshore sources as a significant contributor to nonattainment and does not rely on reductions of offshore emissions to achieve compliance with the ozone NAAQS. In the SIP, Texas's Commission on Environmental Quality (TCEQ) includes MMS's 2005 Gulfwide Emission Inventory as part of its ozone baseline. The SIP also models future projected ozone based on mitigation measures that focus on local mobile emission sources; these modeled projections also use the 2005 Gulfwide Emission Inventory. Thus, the SIP demonstrates that Houston will attain compliance with the ozone NAAQS without new regulations of offshore sources.

2.4 BOEM should not propose new air quality regulations before its scientific air quality studies are completed.

There are several scientific studies being undertaken to improve the understanding of atmospheric dispersion and atmospheric chemistry in the Gulf of Mexico and the Arctic. These include ongoing, comprehensive regional air quality studies in the Gulf of Mexico and the Arctic, and a proposed atmospheric tracer study in the Gulf of Mexico. Additionally, as discussed in Section 8.1, there are some needed upgrades to the Offshore and Coastal Dispersion (OCD) model to facilitate its use in meeting additional requirements proposed in the rule.

²⁴ 81 Federal Register 19718; <https://www.gpo.gov/fdsys/pkg/FR-2016-04-05/pdf/2016-06310.pdf>

Considering the above, BOEM should postpone promulgation of a new air quality regulation until it completes its studies and determines whether OCS emissions significantly affect onshore air quality to the extent that compliance with NAAQS is jeopardized. After the studies are completed, BOEM can update its OCS meteorological and dispersion modeling tools, and establish new emissions exemption thresholds if warranted.

2.4.1 Gulf of Mexico and Arctic Air Quality Studies

BOEM is currently conducting comprehensive multi-year scientific studies assessing the onshore air quality implications of Arctic and Gulf of Mexico OCS emissions. Both studies will evaluate the effect OCS emissions sources have on onshore air quality and will assess existing (and possibly develop new) EETs. The Arctic and Gulf of Mexico studies are scheduled to be completed in December 2017 and August 2017, respectively. Therefore, any rule revisions should be postponed until BOEM completes these studies, updates the OCS meteorological and dispersion modeling tools, establishes the emissions exemption thresholds, and (most importantly) determines whether OCS emissions significantly affect onshore air quality to the extent that compliance with NAAQS is jeopardized.

The purpose of the study focusing on air quality in the Gulf of Mexico and coastal areas²⁵ is two-fold: to support the EIS for the 2017-2022 Lease Block Sales program and to assess existing (and possibly develop new) EETs. In support of the EIS, photochemical grid modeling will be performed using a GOADS emissions database and the National Emissions Inventory to assess cumulative onshore air quality impacts from offshore OCS emissions.

For the EET analysis, emissions from hypothetical OCS sources will be modeled with CALPUFF or AERMOD for sources greater than or less than 50km from the State seaward boundary, respectively. The existing EETs will be evaluated in light of the NAAQS and SILs that have been promulgated since the existing EETs were developed. If modeling demonstrates the existing EETs are not sufficiently protective, new EETs will be developed.

The Arctic study²⁶ also has similar objectives:

- Test the hypothesis that the cumulative impacts from OCS-related activities, exclusive of permitted sources, would not cause a statistically significant impact on Alaska.
- Test the hypothesis that secondary PM_{2.5} and ozone are not significant for cumulative impact analyses.
- Evaluate modelling results to assess the cumulative impact of emissions on the OCS and on the North Slope.
- Apply the results to demonstrate compliance under the NEPA and the CAA for EISs and EAs prepared by BOEM and use the information to evaluate the existing emission exemption equations and, if needed, develop revised exemption equations.

²⁵ Air Quality Modeling in the Gulf of Mexico Region (GM-14-01)

²⁶ Arctic Air Quality Impact Assessment Modeling (AK-13-01)

2.4.2 BOEM's Gulf of Mexico tracer study will further support improved modeling tools.

BOEM's Environmental Studies Program, Studies Development Plan for Fiscal Years 2016-2018 includes a \$1.9 million project to conduct tracer studies in the Gulf of Mexico to better understand the dispersion of air pollutants from offshore sources ("Tracer Experiments for Atmospheric Dispersion Model").²⁷ BOEM's description of the tracer study indicates:

... AERMOD model also will be used to replace the BOEM's OCD air quality model. Furthermore, AERMOD model (EPA) was developed for overland applications. For the Gulf of Mexico, the present data sets are poorly representative of how temperature, winds, and mixing height vary vertically over the atmospheric boundary layer and free troposphere. The existing regulatory air quality models have not been rigorously tested in the marine and coastal environments.

BOEM has ongoing studies, which include "Air Quality Modeling in the Gulf of Mexico Region", to investigate the BOEM's exemption levels and the cumulative impact analysis, and "Enhancing the Capability of a New Meteorological Model for Air Quality and Other BOEM Applications in the Gulf of Mexico". A meteorological field program to collect the meteorological and wave data over the water has also been proposed and described previously. The meteorological model is crucial in the success of the accurate prediction of air concentrations. The accurate wind field generated from a meteorological model is needed for the transport of air pollutants and the meteorological data is also needed in the derivation of the dispersion parameters needed for air quality modeling.

Objectives: This study is a major tracer field campaign to obtain independent air concentration dataset for air quality model verification, especially in the coastal areas. The collected data can be used to derive the dispersion parameters needed for dispersion modeling. The information obtained from the meteorological measurements is crucial in understanding the atmospheric process, characterizing the structure of the atmospheric boundary layer, and the derivation of the dispersion parameters needed for air quality modeling.

We applaud BOEM's efforts and objectives, both in its ongoing and planned studies, to advance the scientific understanding of OCS atmospheric chemistry and dispersion mechanisms. BOEM has recognized that it needs additional data and improved modeling tools in order to more accurately assess air quality consequences of OCS activity. As such, any rulemaking should be deferred until BOEM completes its regional modeling analyses to determine if, or to what extent OCS sources affect compliance with NAAQS onshore, because the current state of the science indicates that the OCS sources do not impact the onshore areas' attainment status.

2.5 BOEM's proposed rule contains many incomplete or undeveloped provisions, precluding meaningful assessment of rule impacts.

In many instances, the provisions of the proposed rule appear to be incomplete or premature. BOEM has specifically solicited comments on approximately forty issues in the proposed rule

²⁷ <http://www.boem.gov/FY-2016-2018-SDP/>, pp.241-242

that have not been fully developed or defined. Appendix C provides responses to each of BOEM's requests for comment.

Many of the issues that are undeveloped are critical components of the air quality regulatory program, and may have significant impact to the regulated community. Without fully developed answers to these issues, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment.

The following are a selection of noteworthy examples:

- In the preamble, BOEM proposes to require measurement of actual emissions on facilities with emissions above "a specific threshold," and requests comment on what that threshold should be in the final rule. (81 Fed. Reg. 19746).
- Proposed § 550.311(b)(2) states "BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment." This provision does not specify what sources are required to have emissions monitoring systems; it simply indicates that BOEM is considering alternatives. Because BOEM has not indicated a specific compliance option, it is impossible to assess the need for and impact of this proposed requirement.
- In § 550.303(c)(3), BOEM proposes to implement new proposed EETs in the Federal Register without a separate rulemaking. BOEM has included a range of EETs within which BOEM may establish updated EETs for each pollutant. However, in the preamble, BOEM states that new EETs are not being proposed in this proposed rule because the scientific basis for determining the potential impacts on the States of OCS emissions have not yet been established. (81 Fed. Reg. 19741).
- In the preamble, BOEM seeks comments on how to attribute emissions from mobile sources to the appropriate facility. (81 Fed. Reg. 19737).
- In the preamble, BOEM solicits comments on the proposed new Air Quality Emissions Reporting (AQR) forms, in terms of their usefulness, readability, complexity and completeness. (81 Fed. Reg. 19759). However, the provided forms, available in the proposed rule docket on www.regulations.gov, are incomplete and do not align with the proposed rule requirements.
- In the preamble, BOEM states that the classification of short-term facility may potentially change based on public comment. (81 Fed. Reg. 19769).

Actions such as establishing emission exemption thresholds, defining the scope of emissions to be evaluated under the air quality regulatory program, and setting requirements for emissions measurement and monitoring systems are critically-important quasi-legislative exercises to support rulemaking. BOEM must publish a revised proposed rule that addresses these critical components with sufficient specificity to facilitate meaningful stakeholder comment. To do otherwise would potentially violate the APA.

2.6 BOEM's stated intent in the preamble does not align with many of the proposed rule provisions.

There are many instances in which BOEM's proposed intent, as described in the preamble, differs from the language of the proposed rule. Some of the discrepancies are for critical compliance requirements. For example:

- In the preamble, BOEM states that an ERM analysis for a short-term facility should address only non-best available control technology (BACT) ERM, unless BOEM requires BACT control measures to address any affected nonattainment area or BOEM determines projected emissions may cause a NAAQS to be exceeded. (81 Fed. Reg. 19778). However, the short-term facility ERM analysis requirement presented in § 550.306 does not indicate that such an ERM analysis is limited to only non-BACT control measures.
- When the control of emissions from a long-term facility is required, BOEM states in the preamble that a lessee or operator with emissions that affect any nonattainment area must perform modelling using revised projected emissions after the application of applicable ERM, including BACT, and compare the results of this modelling to relevant SILs, with no additional modelling required once the modelling results are below all relevant SILs. (81 Fed. Reg. 19780). Section 550.307(b)(2) requires the same facility to perform that same SIL analysis modelling, but then the facility must also perform NAAQS analysis modelling and further ERM evaluation, as required.
- BOEM states that a lessee or operator with a plan that is approved subject to the application of BACT must ensure that the emissions associated with each emissions source for which BACT is required complies with the emissions verification requirements of § 550.311. (81 Fed. Reg. 19781). However, § 550.309(d)(1) requires a lessee or operator to ensure that the emissions associated with each emissions source for which ERM (not just BACT), is required, to comply with the emissions verification requirements of § 550.311. Furthermore, § 550.311(b)(1) requires that the “measurement of actual emissions must include enough of your emissions sources to ensure that the actual emissions ...are consistent with the projected emissions approved for your plan.” And that the operator must “consider “every source” not just the emissions source for which BACT is required.
- In the preamble, BOEM states that the “rule proposes to codify the existing mechanism BOEM uses in the Gulf of Mexico OCS Region to report ongoing emissions information (i.e., the GOADS, as described in [NTL, BOEM NTL No. 2014–G01] and apply it to all OCS regions under BOEM air quality jurisdiction.” (81 Fed. Reg. 19722). However, proposed § 550.187 expands the requirements significantly, including requiring operators to submit “facility and equipment usage, including hours of operation at each percent of capacity for each emissions source” and “monthly and annual fuel consumption showing the quantity, type, and sulphur content of fuel used for each emissions source.”
- In the preamble, BOEM states that under “the proposed rule, any reduction in emissions that is accomplished within the same EPA AQCR would be an acceptable emissions credit.” (81 Fed. Reg. 19741). However, § 550.309 requires that the emissions credits must “affect the air quality of the same AQCR.”

2.7 Extension of comment period and final rule deadline.

While we appreciate the additional 14-day extension to the comment period, a minimum of 180 days was required to fully analyze the potential impacts of the proposed changes and provide constructive comments on this broad, high impact, and complex rulemaking. Because there was not an Advance Notice of Proposed Rulemaking (ANPRM), the regulated community did not have an opportunity to supply information on technical and operational issues that may impact the feasibility of BOEM’s proposed significant changes. Furthermore, as discussed above,

BOEM solicited comments on approximately forty specific issues that require careful consideration and analysis.

A minimum of 180 days was needed to ensure rigorous stakeholder engagement such as conducting thorough technical and cost analyses, as well as providing the information requested in the proposed rule. However, we have developed as complete a set of comments as time constraints allowed.

2.8 BOEM must provide adequate time to comply with the final rule.

The changes proposed in this rulemaking are significant and will require time for operators and BOEM staff to understand and implement. Therefore, it is critical that a phase-in period be incorporated into the implementation of any final rule. This additional time is justified because the new requirements were not published as an ANPRM which would have allowed more time for public comment and industry preparation, and allowed for more time for the development of compliance programs.

If promulgated as written, the final rule would significantly increase recordkeeping and reporting requirements, and would require installation of meters, monitoring systems, and control technologies. In addition, as discussed in Section 2.5, because many of the rule provisions are undeveloped, it is impossible to determine what the compliance requirements and implications would be at this time.

BOEM must establish a compliance timeline following the effective date of the regulation for designated operators and BOEM staff to develop compliance programs to meet the requirements of the final rule. The compliance timeline must account for the number of affected facilities and the associated engineering, implementation and training needed to comply with the new rules.

3 Mobile Support Craft

Under BOEM's proposed revisions, plans would require the inclusion of extensive information about support vessels (MSC) and vessel emissions would be included in the exemption determination and in modeling analyses. It is not clear if emission sources on support vessels would be subject to ERM.

Section 1.2.4 of our comments explains that BOEM cannot consider MSC emissions when determining whether "activities authorized under [OCSLA] significantly affect the air quality of [a] [s]tate" because MSC are not "activities authorized under [OCSLA]."

We concur with Interior's position in the preamble to the 1980 rulemaking that support vessels are not part of a facility if they are not physically attached to a drillship or to an installation that is attached to the seabed and used to transfer production:

vessels used to transfer production away from a facility on the OCS shall be considered part of the facility for the entire period of time that the vessel is moored or otherwise physically attached to the facility. Thus, for purposes of calculating the total emissions, all emissions from such a vessel must be treated as emissions from a source on the facility during that period in which the vessel is physically attached to the facility. Sources on support vessels other than vessels used to transfer production from a facility will not be considered part of the facility." [45 Fed. Reg. No. 47 15135]

In other words, the production transfer vessel ceases to be a "vessel," and is subsumed in a BOEM-authorized "facility" while attached to it and engaged in "producing" OCS resources. See 43 U.S.C. § 1333(a). For similar reasons, a MODU drilling into the seabed ceases to be a "vessel" on the high seas, beyond BOEM jurisdiction, and becomes a BOEM-authorized "facility" when it attaches to the seabed and is "exploring for" OCS resources. *Id.* MSC, on the other hand, which are simply vessels on the high seas (or aircraft in the air), are not attached to the seabed for the purposes of exploring for, developing, or producing OCS, and therefore do not require BOEM "authorization." This precludes them from being subject to any regulatory requirement BOEM establishes under section 5(a)(8) of OCSLA. There are also a number of practical considerations that preclude effective regulation of MSC, as outlined in Section 3.2 below.

For the reasons outlined in this section, we request that BOEM eliminate all rule provisions that require MSC emissions to be accounted for or attributed to a facility. MSC emissions, whether those directly related to a plan or those attributed to a proximate facility, should not be included in comparisons with the EET and should not be included in the modeling analyses.

3.1 It has not been demonstrated that MSC emissions significantly affect onshore air quality.

As discussed in detail in Section 2.4.1, BOEM is currently conducting a multi-year evaluation of Gulf of Mexico offshore emissions and onshore consequences. BOEM's study will support an EIS for an upcoming lease block sales program but is also expected to provide the technical basis for changes to the EETs. The study will consider more than 2,000 offshore installations and related MSC.

This is not the first such study, but it is one of the most comprehensive. To the best of our knowledge, neither BOEM nor any state agency has determined that MSC are a significant contributor to onshore air pollutant concentrations, and thus their own findings do not support the regulation of support vessels. In fact, as shown in Sections 1.1 and 2.3, BOEM has repeatedly asserted in its own documents that OCS sources have a minimal effect on onshore air quality and the MSC emissions are a small fraction of the total OCS sources, showing them to be an insignificant contributor. Given OCSLA's directive that BOEM only regulate offshore facilities to the extent that they affect compliance with the NAAQS onshore, it is unreasonable to propose regulations on MSC.

3.2 It is not practical to quantify emissions from MSC.

Proposed § 550.205 identifies information that must be submitted with EPs, DPPs, DOCDs, or applications for a RUE, pipeline ROW, or lease term pipeline. The section requires plans to include "the following criteria air pollutant and major precursor air pollutant emissions information:

(a) Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan....

(1) For each emissions source, you must identify, to the extent practicable:

(i) Equipment type and number, manufacturer, make and model, location, purpose (i.e., the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics;

(ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and

(iii) The frequency and duration of the proposed use.

(2) For every engine on each facility, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest maximum rated capacity for the type of engine which you will use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.

(3) For engines on MSC, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available,

indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.

This is an extraordinary information demand, and virtually impossible to fulfill at the time a plan is being developed. If BOEM proceeds with this language, it will be overwhelmed with engine data on every MSC in a lessee's fleet of contracted vessels – data of minimal practical utility. Furthermore, plans will have to be constantly updated to account for changes in the lessee's fleet (which occur frequently).

More importantly, BOEM's proposed regulation is asking for information that is not likely to be known at the time of application. Operators of offshore leases typically contract with offshore support companies to provide supplies, oil spill response capabilities, ice management (in the Alaska OCS), and other services. At the time of submittal of an EP, DPP, or DOCD, the designated operator may not have selected a contractor to provide those services. Even if the contractor has been selected, neither the operator nor the contractor are likely to know which support vessel will be used to provide the service. And even if the contractor were selected and knew which vessel would likely initiate service to a facility, another vessel may be substituted. Consequently, it is simply not feasible to accurately quantify emissions from supply vessels at the time of application.

BOEM should continue its current practice by which the lessee describes the support vessels in plan documents, but exclude any information for MSC related to air emissions.

3.3 It is not practical to accurately apportion MSC emissions to a planned facility.

Proposed § 550.205(d) of BOEM's proposed rule requires applicants to "attribute" a share of MSC emissions to the facility when determining exemption and when conducting dispersion modeling assessments.

(d) Attributed emissions. For each criteria and major precursor air pollutant, calculate the attributed projected annual emissions for each of your MSCs, the maximum 12-month rolling sum of each MSC's emissions, and the maximum projected peak hourly emissions for each MSC...

This section goes on to prescribe procedures to calculate emissions from MSC from the time an MSC leaves port until the time it returns to port, and indicates applicants may attribute some of the emissions to other facilities.

As noted above, operators of offshore facilities typically retain offshore support companies to provide supplies, oil spill response capabilities, and other services. At the time of submittal of an EP, DPP, or DOCD, the designated operator may not know which company will be selected to provide those services. Even if the contractor has been selected, neither the operator nor the contractor are likely to know which support vessel will be used to provide the service. In

addition, neither the contractor nor the applicant will know at the time of application how many other OCS facilities will be serviced by the same support vessel. Even after operations have begun, the support vessel route is likely to change with the varying customer requirements and weather. Consequently, it is simply not feasible to accurately attribute emissions from supply vessels at the time of application.

Furthermore, collection of emissions information for mobile sources provides no indication of onshore impact unless the emissions are associated with a specific location. Just as the position of a platform must be known before one can model the onshore effect of its emissions, the location of a vessel determines its potential effect on onshore air quality. But the course a vessel will travel is impossible to predict during development of plans.

No method currently exists to accurately attribute emissions from mobile sources to the appropriate facility and we do not believe it is necessary to do so. Although BOEM requested comment on “methods that more accurately attribute emissions from mobile sources to the appropriate facility”, BOEM lacks authority to regulate vessels and we object to BOEM’s proposal to include emissions from MSC “regardless of proximity but only to the extent related to the applicant’s operations.”

3.4 Other programs regulate emissions from MSC.

It is not clear if the proposed rule would require emission controls on MSC. However, as referenced in Sections 1.2.4 and 3.1, BOEM lacks the authority to regulate MSC. Further, there are already programs in place to regulate emissions from MSC.

The International Maritime Organization (IMO) is the United Nations agency concerned with maritime safety and security and the prevention of marine pollution from ships. The international air pollution standards are found in Annex VI to the International Convention on the Prevention of Pollution from Ships (MARPOL Annex VI). Under MARPOL Annex VI, all US and foreign vessels of any type (including MODUs, floating drilling rigs, and other platforms) operating within the North American Emission Control Area (ECA) must comply with the requirements of Annex VI, except as explicitly excluded, including the following:

- Emissions to air from ships in US waters are subject to the requirements of the North American and US Caribbean Sea ECAs.
- Sulphur oxides (SO_x) and particulate matter emissions are limited through fuel oil sulfur limits that apply to all vessels.
- The nitrogen oxides (NO_x) control requirements of Annex VI apply to marine diesel engines greater than 130 kW output power that are installed on a vessel constructed after January 1, 2000 or have undergone a major conversion on or after January 1, 2000.
- Under MARPOL Annex VI, any ship of 400 gross tons and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties, and platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties must carry an International Air Pollution Prevention Certificate (IAPPC) and Engine International Air Pollution Prevention Certificates (EIAPPC) to demonstrate that

they have been approved by their Flag Administration to meet the international limits for air emissions from ships, including SO_x and NO_x.

- There are accepted mechanisms for Coastal State Administrations to check compliance with the IAPPC and EIAPPC(s), and BOEM should recognize these without imposing additional burdens on the regulated community.

In fact, BOEM's proposals for MSC could threaten to undermine or contradict regulations that other US agencies with jurisdiction for vessel emissions have already freely entered into. For example, the proposed regulations seem to conflate two distinct and separate issues: emissions of SO_x and emissions of NO_x.

SO_x emissions are a product of fuel sulphur content and are not an engine certification matter. Emissions of NO_x, however, are an engine certification matter, and marine engines are tested with a reference fuel. The emission factors for engines are approved in accordance with test cycles defined in the NO_x Technical Code. The means of SO_x compliance for ships subject to MARPOL VI is stated on the IAPPC and are approved in accordance with IMO guidelines such as MEPC Resolution 259(68). NO_x emissions are the subject of the EIAPPC, which is then used to endorse the IAPPC.

Under BOEM's proposal, however, the fuel sulphur content used for engine testing would form part of the engine approval. This would represent a major deviation from the IMO NO_x Technical Code requirements, and would create difficulties in terms of demonstrating compliance.

With the IMO programs in place, the gradual replacement of engines and ships will reduce emissions without additional regulation by BOEM. We note that MARPOL Annex VI regulation is analogous to how onshore mobile sources are regulated. For example, refinery permit applications do not need to include in a permit application emissions from trucks delivering supplies to a refinery or carrying refined fuel from a refinery. Likewise, a lumber mill permit does not limit emissions or require emissions controls on a railroad locomotive hauling product. In both cases, other regulatory programs address emissions from transportation sources (i.e., the Federal Railroad Administration, and EPA motor vehicle emissions programs).

In addition, EPA establishes standards for marine engines for US registered or flagged vessels (provided in 40 CFR parts 94 and 1042). Ships that are not US flagged vessels are not subject to EPA marine engine regulations but are subject to the MARPOL Annex VI regulations when operating in the ECA.

EPA has established emission limits for marine engines installed on US flagged vessels as part of its strategy to reduce marine vessel emissions in accordance with MARPOL Annex VI. The ECA and other requirements of MARPOL Annex VI are implemented in the US through regulations adopted under the Act to Prevent Pollution from Ships (APPS), provided in 40 CFR part 1043. Part 1043 requires that non-emergency engines greater than 130 kW installed or reconstructed on vessels after January 1, 2000 must be covered by a valid EIAPP certificate issued by EPA. Manufacturers of engines to be installed on U.S. vessels subject to this part must obtain an EIAPP certificate for an engine prior to it being installed in a vessel. Owners of US flagged vessels must keep records related to NO_x standards and in-use fuel specifications

such as the Technical File, the Engine Book of Record Parameters, and bunker delivery notes as required under MARPOL Annex VI.

Finally, EPA establishes regulations governing sulfur contents in the highway diesel fuel, fuel used in nonroad equipment and locomotive, and marine (NRLM) diesel fuel (provided in 40 CFR part 80). For NRLM diesel fuel, the EPA regulations have substantially reduced the sulfur content of the fuel and, thus, the potential SO_x emissions associated with its use. For example, since June 1, 2012, the maximum sulfur content for NRLM diesel fuel for most applications is 15 ppm, which was a substantial reduction from the 500 ppm standard that was introduced five years prior. These changes occurred without new emission reduction requirements from BOEM.

Therefore, BOEM's air quality rules should not include any requirements for vessels subject to IMO and EPA requirements.

3.5 Oil spill response vessels remain in port in the Gulf of Mexico.

The definition of MSC in proposed § 550.105 includes oil spill response vessels (OSRVs). Pursuant to § 550.205, all MSC must be identified in the plan and emissions would be calculated as part of attributed emissions. However, in the Gulf of Mexico, OSRVs are stationed at ports along the Gulf Coast and used only when needed (e.g. when a spill occurs).

We request that all provisions related to attributing vessel emissions to a facility and requiring modeling analyses of vessels be removed from the rule. However, if BOEM proceeds with the requirements to regulate MSC, despite the lack of authority to do so, BOEM should clarify how emissions from an OSRV should be accounted for in a plan when it is unknown whether an OSRV will be required over the facility planning period.

4 Consolidation of Facilities

Section 550.303(d) of the proposed rule addresses consolidation of air pollutant emissions from multiple facilities:

1) *You must report the projected emissions from multiple facilities which may have been or are described in multiple plans, as the complex total emissions for your plan, if:*

(i) The air pollutant emissions are generated by proximate activities (i.e., the same well(s); a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, by facilities located within one nautical mile of one another); and

(ii) You wholly or partially own, control or operate those facilities; in the event of a dispute as to what constitutes common ownership, control or operations, BOEM will make a determination by reference to the ONRR criteria defined in 30 CFR 1206.101 and 1206.151; and

(iii) The construction, installation, drilling, operation, or decommissioning of any of your facilities occurs within a contemporaneous 12-month period as the construction, installation, drilling operation, or decommissioning of any other facility; and

(iv) Such a consolidation of emissions from multiple facilities would generate emissions sufficient to exceed an applicable emission exemption threshold (based on the exemption review described in paragraphs (e) or (f) of this section).

(2) If any two or more facilities meet all of the conditions specified in (d)(1)(i) through (iii) of this section, you must calculate the sum of the projected emissions from those facilities (including their respective attributed emissions) as the complex total emissions for your plan.

Subject to these applicability criteria, the proposed revisions would require facility plans to include substantial information regarding “proximate” existing facilities. Not only must plans include detailed operational and emissions information about these existing facilities, emissions from the proximate facilities and attributed emissions from their MSC must be included for comparison with EETs. The combined effect of consolidating facilities and including MSC emissions for comparison with an expanded list of EETs will be that plans are far more likely to exceed EETs, thereby triggering extensive modeling and ERM evaluations. The cost implications of the proposed rule are discussed in Appendix B.

BOEM has yet to demonstrate that consolidating emissions from distant OCS facilities is needed to protect onshore ambient air quality. The only justification for this extraordinary expansion of the AGRP is that it would ensure projects are not segmented to avoid modeling and ERM requirements. However, the proposed rule has consequences that go far beyond its purported intent.

We believe there are significant legal questions and extremely challenging applicability and implementation issues associated with this proposal, and that the existing rules adequately

ensure projects are not artificially segmented. Furthermore, as discussed below, cumulative impacts are already assessed if new facilities add model-predicted concentrations to measured background values (which include the contributions from existing facilities). We request that BOEM eliminate all proposed provisions regarding aggregation of new facilities with previously permitted facilities.

4.1 BOEM's existing regulations adequately address cumulative impacts.

When emissions from proposed facilities exceed EETs, BOEM's proposed modeling procedure requires applicants to apply approved air quality models to calculate onshore concentrations attributable to the proposed facility. To demonstrate compliance with NAAQS, modeled concentrations are added to existing "background" concentrations to determine cumulative concentrations. This simple procedure accounts for emissions from existing OCS and onshore facilities as part of the background concentration, and provides the cumulative impact analysis BOEM seeks. This procedure is routinely applied in onshore permit applications. BOEM's proposal to consolidate OCS facilities unnecessarily complicates this procedure.

The preamble to the proposed rule states the concept of consolidating facilities is intended to "prevent a single entity from segmenting its operations into multiple plans to avoid exceeding EETs." Presumably, consolidating facilities is designed to ensure that the cumulative impacts of related projects are evaluated. However, BOEM already has procedures in place to examine unusual situations. In the preamble to the 1980 rulemaking, Interior recognized that "in certain infrequent instances, it is possible for emissions from OCS sources to interact in such a way as to increase notably onshore ambient air concentrations of pollutants." [45 Fed. Reg. No. 47 15135] As a result, the current AQRP includes provisions for cumulative impact assessment when there is information to suggest significant onshore impacts:

in the judgment of the Regional Supervisor, that projected emissions from an otherwise exempt facility will, either individually or in combination with other facilities in the area, significantly affect the air quality of an onshore area, then the Regional Supervisor shall require the lessee to submit additional information to determine whether emission control measures are necessary. The lessee shall be given the opportunity to present information to the Regional Supervisor which demonstrates that the exempt facility is not significantly affecting the air quality of an onshore area of the State." [30 CFR § 550.303(j) and § 550.304(f)]

When this was written, it was the position of Interior that "the incorporation of these provisions insures that cumulative impacts of OCS facilities on the air quality of onshore areas will be identified and effectively controlled." We believe that position remains true.

Given that cumulative effects of multiple facilities would rarely, if at all, significantly affect onshore air quality such that compliance or continued attainment of the NAAQS is threatened, the exemption screening and significance procedures should be conducted for a single facility; only when there is clear evidence or reasoning that demonstrates that multiple facilities, in combination, are significantly affecting onshore air, should additional analysis be conducted. To provide further clarity as to which facilities BOEM will consider in a cumulative analysis, we propose specific revisions to current § 550.303(j) (see our proposed § 550.303(i) in Appendix

A). Our revisions propose that BOEM include only facilities for which the lessee is the designated operator, that are within the 500 meter USCG safety zone of the otherwise exempt facility, and that share certain (specified) production equipment.

Our proposed revisions provide BOEM the ability to gather the information necessary to meet its mandate to determine whether OCS activities it approves will significantly impact the air quality of a coastal area such that emission control measures may be necessary for compliance with the NAAQS.

Furthermore, BOEM's EIS requirements of current 30 CFR § 550.227 require a cumulative analysis for identified resources, including air quality, to demonstrate compliance with NEPA. Together, the Regional Supervisor's narrowly tailored discretion to require cumulative analyses and BOEM's NEPA regulation provide sufficient authority for BOEM to protect onshore air quality from potential cumulative effects from OCS activities.

4.2 BOEM's proposed criteria for consolidation of "proximate" facilities with "common" ownership are arbitrary and impractical.

As discussed in Section 1.4, OCS leases frequently have numerous fractional interest owners with varying degrees of control (or no control at all) over operations. Accordingly, BOEM cannot assume "common" ownership equates with "common" control on the OCS. Nonetheless, the proposed rule requires that a plan include extensive information, including emissions and operational data that may be confidential, about existing facilities that are to be consolidated with a proposed facility.

Furthermore, in some areas of the Gulf of Mexico a "daisy chain" effect may potentially require a significant number of facilities across multiple lease blocks to be consolidated into a single complex. The likelihood of this happening will depend on the specificity of the ownership and distance criteria, which have yet to be resolved. Other criteria could also contribute to a daisy chain effect:

- The definition of proximate activities in proposed § 550.303 introduces the concept of a common reservoir. Using a "common reservoir" criterion for consolidating facility emissions subjects designated operators to dynamic and changing criteria. Furthermore, there is no demonstrated nexus between geophysical conditions below the surface of the seafloor and onshore air quality impacts that justifies consolidation based on a common reservoir. Additionally, this classification discloses confidential information to the general public (based on common reservoir boundaries). The public version of plans exempts submittal of reservoir and geological data.
- The definition of "facility" in proposed § 550.302 introduces the concept that a facility includes all BOEM-regulated pipelines and activities connected to such pipeline. This implies all facilities connected to a common BOEM-regulated pipeline could be considered a single facility for air quality regulatory purposes. It is not clear how consolidation of multiple facilities across multiple lease blocks would be incorporated into a single plan, especially where there are multiple operators.

To illustrate the potential complexities of BOEM's consolidation proposal, we present two figures illustrating facility locations in the Gulf of Mexico as presented in the 2011 Gulf Emission

Inventory.²⁸ In Figure 1, the single facility at the center of the circle with a one mile radius could potentially be consolidated with 69 other facilities. Figure 2 demonstrates the potential daisy chain effect by including circles of one mile radius for each of these 69 facilities. Together, these figures demonstrate that, aside from the fact that consolidation of facilities is unnecessary, consolidating facilities within a one mile radius of each other could be impractical and unworkable from a data-gathering and plan approval perspective.

4.3 The implications of consolidation of existing facilities are not identified.

Under the proposed rule, a proposed facility would potentially be required to identify emissions from multiple facilities (and their associated MSC) and to address the aggregated emissions in an EP, DPP, or DOCD. However, implications of consolidations for the existing facilities is not clear. Per proposed § 550.303(d)(4), if a designated operator is required to consolidate multiple facilities, then anywhere a requirement applies to “projected emissions” it would instead apply to “complex total emissions.”

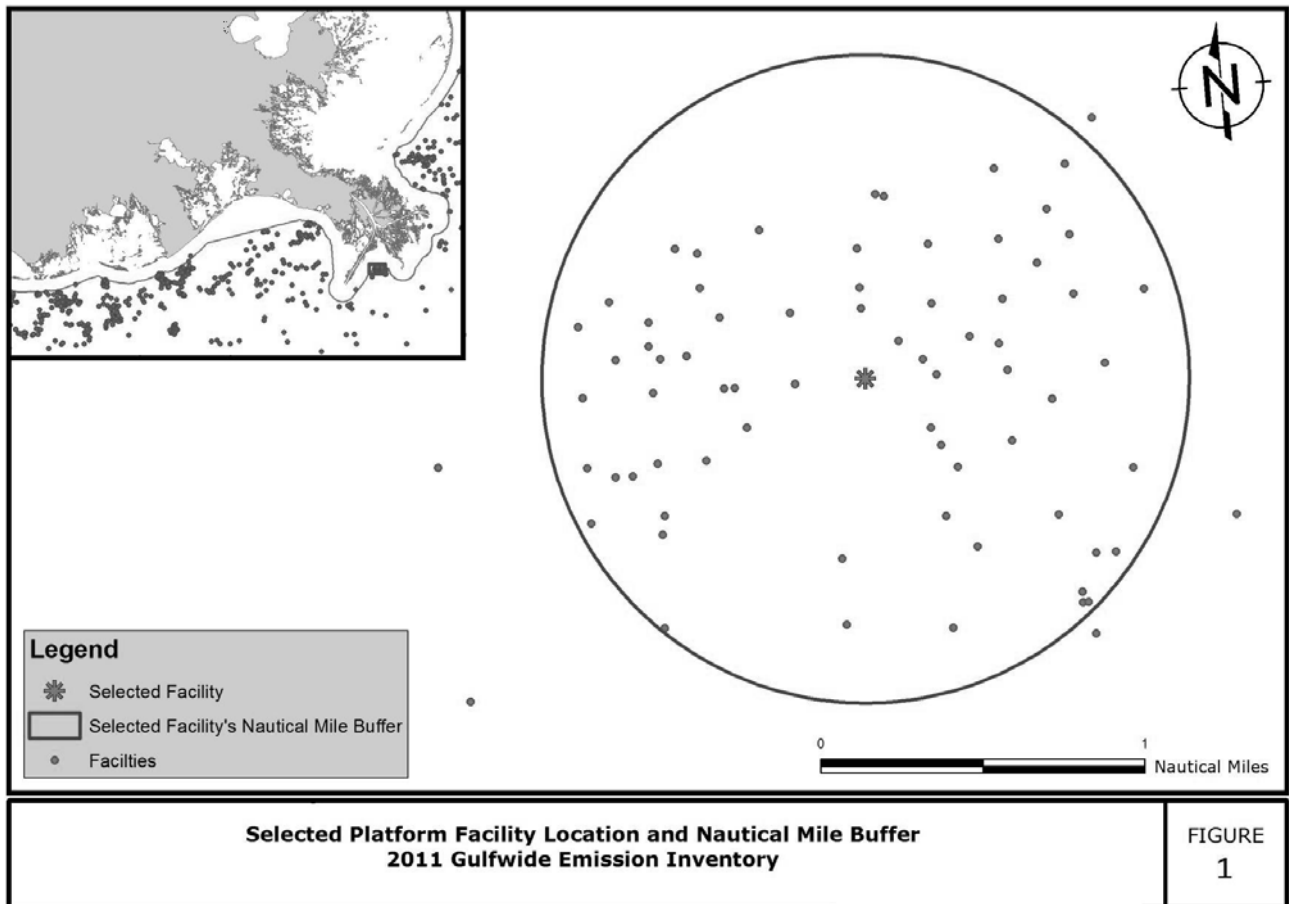
If emissions from the proposed facility do not cause onshore concentrations that exceed a SIL but emissions from the consolidated facility do, it is not clear whether the new facility, the existing facility, or both would implement ERMs. The proposed text in § 550.306(5) refers to selecting reasonable operational controls to “limit your facility’s projected emissions to the greatest practicable extent.” Section 550.307(a), states that “you must apply ERM for the facility.” This would suggest that ERM is only required for the facility described in the plan.

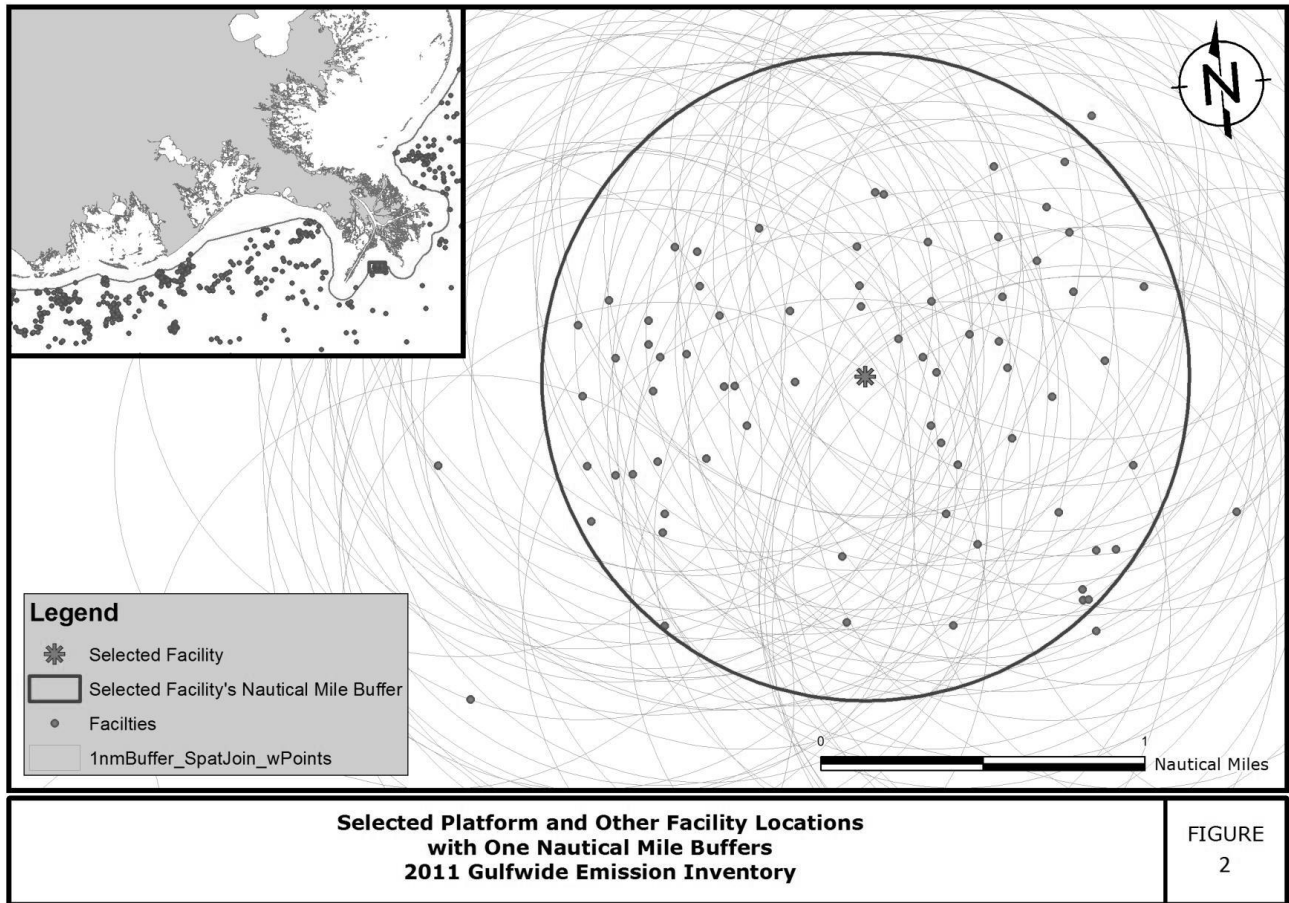
However, proposed § 550.306(b)(2) requires a description of “your revised projected emissions (or complex total emissions, where applicable), taking into account your selected operational controls or replacement(s) of equipment” and §§ 550.307(b)(1)(iv) and (b)(2) refer to reducing “your projected emissions” to meet the AAIs and “demonstrating “that all projected emissions have been fully reduced so that no SIL is exceeded.” Consequently, it appears these sections will require designated operators to assess and implement ERM on existing facilities that are already operating according to approved plans.

Similarly, if a complex of facilities is operating under an approved DOCD or DPP and near field exploration is proposed, it is not clear if the introduction of a MODU into the complex area would trigger a revision to the DOCD or DPPs or the requirements for the existing facilities to demonstrate compliance with current NAAQS.

In summary, we request that BOEM revise the proposed rule to eliminate all suggestion of consolidation of proximate facilities and focus plan approval on the proposed facility. However, we support retaining the narrowly tailored discretion of the Regional Supervisor to require a cumulative analysis subject to the conditions specified in our proposed § 550.303(i) (see Appendix A).

²⁸ Wilson, D., R. Billings, R. Chang, H. Perez, and J. Sellers. 2014. *Year 2011 Gulfwide emissions inventory study*. US Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2014-666.





5 Facility Definition

The proposed rule modifies the current definition of “facility” in the regulations. In addition, BOEM proposes to add several definitions to the rule, including “complex total emissions,” “proximate activities,” “projected emissions,” and “attributed emissions.” Through these definitions, BOEM would not only treat activities that had previously been treated as separate as “one facility”, but also would require groups of separate facilities to be evaluated together (e.g., if they are located near one another), even though they are in fact separate facilities. If EETs are exceeded based on the emissions of any facility or the combined facilities, the impacts would need to be addressed for either an existing facility undergoing a plan resubmission or for a new plan to go forward.

The proposed addition of these new concepts and the changes to the definition of “facility” should not be adopted because they: (1) exceed BOEM’s authority under OCSLA, and (2) inappropriately broaden the common-sense notion of the types of activities that are subject to BOEM’s air quality regulatory jurisdictions by inappropriately combining distinct facilities. In total, these proposals would create tremendous uncertainty regarding how these terms will be interpreted and applied over time.

Although the beginning of the proposed definition seems to establish a somewhat discrete boundary for the facility that a regulated entity would be able to apply in practice and would create replicable results from plan to plan, the additional inclusion of all installations, structures, vessels, vehicles, equipment, or devices “*while dependent on, or affecting the processes of*” the facility is vague and open to unguided and subjective interpretation. Furthermore, the final sentence also expands the scope of the term “facility” well beyond an easily understood, discrete boundary.

BOEM should limit the scope of the term “facility” to clearly defined boundaries within the scope of BOEM’s authority. Otherwise, companies could be required to account for emissions that are difficult to identify and model and “address” those emissions for continued operation or before a project could go forward. This level of uncertainty is unworkable in the context of drilling operations and could subject operators to ad hoc and potentially inconsistent determinations by BOEM, which could evolve over time.

Accordingly, BOEM should not include these additional emissions in “complex total emissions” and should delete reference to “facilities” (plural) throughout these definitions. Only the “facility” (as defined below) emissions should be included in the analysis.

Joint trades’ proposed definition of “Facility” – Section 550.302:

Facility means, any installation, structure, ~~vessel, vehicle,~~ equipment, or device that is temporarily or permanently attached to the seabed of the OCS for the purpose of exploring for, developing, or producing oil or gas or sulphur therefrom, and which emits a regulated criteria or precursor pollutant, including but not limited to a dynamically positioned ship, gravity-based structure, manmade island, or bottom-sitting structure, whether used for the exploration, development, production or transportation of oil, gas, or sulphur. ~~All~~ installations, structures, ~~vessels, vehicles~~ equipment, or devices directly associated with

~~the construction, installation, and implementation of a the facility are a part of a facility only while located at the same site, attached, or interconnected by one or more bridges or walkways, or while dependent on, or affecting the processes of, the facility, including any ROV attached to the facility. One facility may include multiple drill rigs, drilling units, vessels, platforms, installations, devices, and pieces of equipment. Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the "tender assist" mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels-, while temporarily or permanently attached to the seabed and exploring for, developing, or producing oil and gas or sulphur resources. Facilities also include all Floating Production Systems (FPSs), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars, while temporarily or permanently attached to the seabed. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.~~

6 Emission Exemption Thresholds

After BOEM studies in the Gulf of Mexico and Alaska are completed, BOEM proposes to revise the EETs. The proposed rule establishes a range with the “maximum” potential EETs stated in § 550.303(c)(3)(ii) and the minimum potential EETs in Table 1 of § 550.303. The maximum EETs are the same as the existing EETs except the distance used is from the state seaward boundary not the shoreline.

6.1 BOEM’s proposed regulation is premature because it attempts to define a range for exemption criteria before the necessary scientific bases have been established.

As discussed below, in this chapter, BOEM should not constrain future EET values by including a range in the rule. BOEM should not finalize emissions exemption threshold ranges prior to completing its scientific studies.

As discussed in greater detail in Section 2.4.1, there are several scientific studies being undertaken to improve the understanding of atmospheric dispersion in the Gulf of Mexico and to determine the effect of OCS emissions on onshore air quality in Alaska and the Gulf of Mexico. Although BOEM acknowledges that studies are underway that will inform the selection of EETs, BOEM’s rulemaking identifies a range of possible EETs that will constrain the ultimate decision.

In its Initial Regulatory Impact Analysis (IRIA), BOEM states on page 64 that waiting until the scientific studies are completed

would make it more difficult to ensure that BOEM meets its statutory duties. The amendments are necessary to ensure BOEM establishes up-to-date requirements and air quality standards are consistent with those identified by USEPA under the CAA, preparation of projected emissions, air dispersion and photochemical modeling, and control of emission sources. In addition, the purpose of the amendments is to ensure the consistent, efficient, and informed management of the OCSLA provision to ensure air emissions from BOEM-authorized activities on the OCS do not result in material impacts to state air pollution by the GOMR and Alaska OCS oil and gas operations.

As discussed in sections 1.1 and 2.3, BOEM has repeatedly asserted in its own documents, including the Environmental Assessment for this proposed rule, that OCS sources have a minimal effect on onshore air quality. Consequently, there is no urgency in adopting new EETs and modeling requirements for OCS sources to ensure protection of onshore air quality. BOEM can continue to require plans to address NAAQS not identified in its existing rule as it currently does for the 1-hour NO₂ standard. Furthermore, BOEM acknowledges on page 64 that

It is BOEM’s current practice to update the SILs and AAls and add the additional air pollutants for which standards have been established by the USEPA even without changes in BOEM’s regulations.

Because the science studies have not been completed and there is no demonstrated need for immediate updates to the rule, BOEM should eliminate the proposed range of EETs from the

proposed rule. After the studies are completed, BOEM must engage in full APA notice-and-comment rulemaking before changing any EETs.

BOEM solicited comments on the appropriateness of distinct emissions thresholds or threshold formulas for Alaska and Gulf of Mexico, and/or how these thresholds should be structured. Consistent with our overall position on revising EETs, BOEM should delay this decision until the scientific bases for EETs have been established. Until then, we have no basis for making a decision on this important issue. However, given the much lower existing background concentrations in the North Slope Borough, we anticipate that higher EETs will be appropriate in Alaska.

6.2 The high end of the proposed emissions exemption threshold range may be overly conservative.

At § 550.303, the proposed rule identifies the current EETs as the maximum exemption thresholds that might be adopted. However, it is not a foregone conclusion that the EETs recommended in future studies would be lower than the existing EETs. As recently as 2014, Dr. Chester Huang from BOEM published an article in the *Journal of the Air and Waste Management Association* comparing the BOEM EET formula for annual TSP, SO₂, and NO_x with four other options.²⁹ He concluded “it has been shown that the total amount of emissions from the facility for each air pollutant calculated using BOEM’s exemption formula is conservative.”

Based on this paper and industry permitting experience, future conservative EETs might be higher and there is no scientific reason to limit them using the existing formulae. As did Dr. Huang, we typically find that the simple screening procedures such as the one used to establish the existing exemption thresholds are far more conservative than more refined modeling analyses. Such conservatism significantly increases cost to the regulated community with little benefit to onshore air quality. For that reason, we do not support BOEM’s proposal to use the existing formulae, adjusted for compliance at the state seaward boundary, as the upper limit to potential exemption thresholds.

We support BOEM’s proposal to establish new EETs based on the EET studies now underway and we oppose the continued use of the simple Gaussian equation to determine EETs.

6.3 Emissions exemption thresholds must account for distance to the onshore area of a State.

BOEM requested comments on a mass-based emissions exemption threshold similar to EPA’s PSD program (81 Fed. Reg. 19741). A mass exemption threshold is inconsistent with the authority granted by OCSLA because mass emissions alone do not determine whether a source will have a significant effect onshore that affects compliance with the NAAQS. Other factors, primarily distance and wind direction but including atmospheric chemistry and emissions release

²⁹ C.H. Huang (2015), Derivation of exemption formulas for air quality regulatory applications, *Journal of the Air and Waste Management Association*, 65:3, 358-364, DOI: 10.1080/10962247.2014.993003.

characteristics, determine the onshore consequence. If a mass-based exemption level were set, it could result in costly emission control requirements with minimal environmental benefit.

Because OCSLA authorizes BOEM to regulate emissions only to the extent the emissions have a significant effect on onshore air quality and threaten compliance with NAAQS, BOEM cannot ignore distance when establishing exemption thresholds.

6.4 Separate emissions exemption thresholds are needed for criteria pollutants that are also PM_{2.5} and ozone precursors.

6.4.1 BOEM should refine its definition of precursor air pollutant.

BOEM addresses both direct emissions of criteria pollutants and precursor air pollutants. BOEM defines a precursor air pollutant as:

A compound that chemically reacts with other atmospheric gases to form a criteria air pollutant. Some precursor air pollutants are also defined as criteria air pollutants. Precursor air pollutants include VOCs, NO_x, SO_x, and NH₃. (§ 550.302(b))

This definition is too broad. Unless the scientific studies currently underway indicate otherwise, we recommend that BOEM adopt a more specific definition of precursor that outlines the circumstances under which precursors must be considered for modeling and assessment of NAAQS compliance. Provisions similar to that contained in EPA's New Source Review regulations would be appropriate, such as from 40 CFR 51.165(a)(1)(xxxvii):

Regulated NSR pollutant, for purposes of this section, means the following:

(A) Nitrogen oxides or any volatile organic compounds;

(B) Any pollutant for which a national ambient air quality standard has been promulgated;

(C) Any pollutant that is identified under this paragraph (a)(1)(xxxvii)(C) as a constituent or precursor of a general pollutant listed under paragraph (a)(1)(xxxvii)(A) or (B) of this section, provided that such constituent or precursor pollutant may only be regulated under NSR as part of regulation of the general pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(1) Volatile organic compounds and nitrogen oxides are precursors to ozone in all ozone nonattainment areas.

(2) Sulfur dioxide is a precursor to PM_{2.5} in all PM_{2.5} nonattainment areas.

(3) Nitrogen oxides are presumed to be precursors to PM_{2.5} in all PM_{2.5} nonattainment areas, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient PM_{2.5} concentrations.

(4) Volatile organic compounds and ammonia are presumed not to be precursors to PM_{2.5} in any PM_{2.5} nonattainment area, unless the State demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic

compounds or ammonia from sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations; or

The EPA definition clarifies that VOCs and ammonia are not PM_{2.5} precursors unless it is demonstrated that emissions of these compounds significantly contribute to PM_{2.5} concentrations. The EPA definition of precursor also excludes methane and CO, whereas BOEM proposes to include CO as a precursor pollutant and has solicited comment on how it should address the effects of methane emissions on secondary ozone formation and when it might be appropriate to do so (see Appendix C). BOEM should revise its proposed precursor definition to be consistent with the above citation. BOEM should also revise its proposed photochemical modeling requirements at § 550.304(e)(1) to consider only SO_x and NO_x for modeling PM_{2.5} and only NO_x and VOC when modeling ozone.

6.4.2 BOEM should establish separate EETs for criteria pollutants that are also precursors.

Although BOEM should delay establishing EETs until the science studies are completed, BOEM should then clarify in proposed § 550.303 and § 550.304 that criteria pollutants that are also precursors to PM_{2.5} and ozone formation would have two or more sets of EETs: 1) one triggering an analysis for an associated NAAQS for the criteria pollutant and 2) one or more EETs triggering a photochemical modeling analysis for PM_{2.5} and/or ozone. Some NO_x and SO_x sources may exceed the criteria pollutant EETS, but may not necessarily be required to perform an assessment of compliance with the ozone and/or PM_{2.5} NAAQS.

6.5 The low end of the EET range provides no environmental benefit.

The EETs at the low end of the proposed range likely provide no environmental benefit and could result in significant negative economic impacts. This statement is supported by examining how many plans are likely to require modeling if the lower EETs are adopted and a review of modeling submitted with prior Gulf of Mexico plans.

Emissions associated with 1,132 facilities were obtained from the 2011 Gulfwide Emission Inventory Study (GEIS).^{30,31} We compared actual emissions for each facility to the existing EETs and the proposed minimum EETs. Support vessels emissions were not attributed to the facilities. Only the annual EETs were assessed because the GEIS does not report 24-hour, 8-hour, 3-hour, or 1-hour emission rates. The pollutants considered were NO_x, SO_x, PM_{2.5}, and PM₁₀.

The assessment revealed that 32 facilities would be required to conduct air quality modeling under existing EETs. Under the proposed minimum EETs, and not accounting for facility consolidation, 427 additional facilities would exceed the EETs and have to conduct modeling. In

³⁰ Wilson, D., R. Billings, R. Chang, H. Perez, and J. Sellers. 2014. Year 2011 Gulfwide emissions inventory study. US Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2014-666.

³¹ The GEIS complexes were not assessed because the definition of a complex for the emission inventory differs from that in the proposed rule. We also ignored "minor sources" (caissons, wellhead protectors, and living quarters).

other words, the fraction of facilities exceeding the EETs would increase from 3 percent to 41 percent. Furthermore, this analysis is based on actual emissions rather than projected emissions and did not consider the implications of consolidating facilities or vessel emissions as BOEM now proposes. Inclusion of these additional aspects could further increase the number of facilities required to conduct air quality modeling.

Next we examined modeling studies that have been conducted under the current regulations. We evaluated NO₂ because the NO₂ NAAQS is very stringent. Modeled facilities included jackup rigs, semisubmersible units, and drillships operating between 4 and 196 miles from shore. Of 38 facilities that conducted dispersion modeling of NO₂, approximately 90 percent predicted onshore 1-hr NO₂ concentrations that exceed the 1-hr NO₂ SIL but none predicted exceedances of the 1-hour NO₂ NAAQS.

If the 38-facility dataset is representative of all Gulf of Mexico facilities, then under BOEM's proposed rule 90 percent of OCS facilities may require NO_x ERM and would be required to conduct additional modeling depending on whether the facility is short-term or long-term. However, previous modeling indicates that none of the existing facility operations result in onshore ambient air design concentrations that exceed the NAAQS.

This finding is corroborated by the Gulf of Mexico lease sale Draft EIS BOEM recently circulated for public comment.³² Section 4.1.2 of the Draft EIS states "The 1-hour NO_x modeling performed by operators as part of the post-lease approval process indicates less than the maximum increase allowed."

Review of the proposed EETs and existing dispersion modeling indicate that the proposed rule would increase the number of OCS sources required to conduct modeling without providing any environmental benefit. Consequently, BOEM should not revise its EETs or set a minimum EET threshold until it completes its scientific studies.

6.6 The minimum emissions exemption thresholds in § 550.303 include errors.

There is an error in Table 1 of the proposed rule and in the supporting technical document.³³ The technical document applies a simple Gaussian model to estimate EETs for a given downwind distance, SIL and averaging period. The model is used to predict an hourly concentration and the estimate is supposed to be adjusted for different averaging periods using the persistence factors from EPA's dispersion model AERSCREEN. Our review of the analysis indicates the averaging time scaling was not performed when adjusting the results for each pollutant.

³² Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022 Draft Environmental Impact Statement Volume I & Volume II, U.S. Department of the Interior, Bureau of Ocean Energy Management, April 2016.

³³ "Methodology for Determining Emission Thresholds Based on EPA Significance Levels", Appendix to Air Quality Control, Reporting and Compliance, Proposed Rule (30CFR Part 550: Subparts A, B, C, & J), RIN 1010-AD82, BOEM March 17, 2016.

For example: the EET of 1-hr CO is given by $1354d^{1.2693}$. We have independently checked this result using the equations in the technical document. The leading coefficient for 8-hr CO after adjusting for the decrease in the SIL and the scaling factor for an 8-hour average should be $1354*(500/2000)*(1.0/0.9)$ or 376.1, not 338.5 as reported in the supporting document and Table 1 of § 550.303. Similarly, the annual EETs in Table 1 are 10 times too low. For example, using 1-hour CO as the basis, the constant 1354 should be $1354*(1.0/2000)*(1.0/0.1)$ or 6.77, not 0.677.

7 Emission Reduction Measures

7.1 BOEM must fully define and develop the emission reduction measures program and ensure that it is appropriate for OCS operations.

We support BOEM's proposal to change the circumstances of when ERM, including BACT and emissions credits, are required. However, the proposed rule does not provide adequate information regarding how BOEM would evaluate and implement its ERM program and what expectations would be placed on OCS facility operators. From the preamble, it is clear that the ERM program is still only in a conceptual state, as evidenced by the many solicitations for comment on numerous aspects of ERM (see Appendix C). The ERM program BOEM is considering must be proposed with sufficient specificity to facilitate meaningful stakeholder comment.

In the preamble to the proposed rule, BOEM states that it intends to publish its own ERM guidelines, and solicits comments on the EPA's approach and the underlying methodology for making the determination as to what forms of ERM may be most appropriate under various circumstances. BOEM also solicits comments on why or under what circumstances the EPA approach may or may not be appropriate to the OCS environment and how the ERM requirements could be best tailored to the unique conditions of the offshore oil and gas industry. (81 Fed. Reg. 19744).

As discussed in Section 2.1, given the difference in Congressional mandate, it is entirely appropriate that BOEM's policy regarding emissions controls for OCS facilities differs from EPA's policy. OCS sources are external to the areas whose air quality they may affect and generally are located at long distances from that area. Given the considerable distance between OCS facilities and the shoreline, the potential to "significantly affect the air quality of any state" is minimal and in such cases there is no justification for complicated and expensive emissions controls.

The following sections provide comments and recommendations on specific aspects of the ERM program.

7.1.1 BOEM must clarify the proposed requirements for emission reduction measures.

Proposed §§ 550.309(a)-(c) present requirements for ERM that address "sufficiency", "effectiveness", and "control efficiency." These requirements are unclear, overly complicated, and duplicative of the plan requirements in proposed § 550.205(f). Proposed § 550.205(f) requires operators to provide a description of all ERM, including the "projected quantity of reductions to be achieved" (sufficiency), the "monitoring or monitoring system you propose to use to measure or evaluate the associated emissions" (effectiveness), and the "emission control effectiveness."

Proposed § 550.309(b) requires continuous verification that ERM are effective, however, BOEM does not specify what will be expected of operators in order to demonstrate compliance. BOEM proposes in § 550.309(d) that the Regional Supervisor may require actual emissions data and/or any other information he or she deems necessary to verify compliance. Because this is

overly vague and without well-developed provisions, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment.

Proposed § 550.309(c) requires the operator to substantiate any emissions control efficiency but again BOEM does not specify what will be expected of operators in order to demonstrate compliance with an estimated emission control efficiency.

The requirements related to “effectiveness” and “control efficiency” are suitable for emissions sources installed with BACT or operational controls, but are not relevant terms for emissions credits. BOEM should revise these requirements to only apply to emissions sources installed with BACT or operational controls.

Furthermore, proposed § 550.309(d)(1) requires that operators ensure that emissions associated with emissions sources subject to ERM comply with the emissions verification requirements in § 550.311. However, proposed § 550.311 does not identify specifically how emissions are to be monitored; instead, BOEM states that it is considering various alternatives. BOEM has also proposed inconsistent requirements, where the monitoring requirements in § 550.309(d) are applicable to emissions sources approved subject to ERM, whereas the proposed requirements in § 550.311 are applicable to plans that are approved subject to BACT and emissions credits. Again, without well-defined provisions, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. In Chapter 11, we provide recommendations for monitoring alternatives.

7.1.2 BOEM must provide clarity on how it will consider technical feasibility and cost effectiveness.

In the preamble, BOEM indicates that although not stated explicitly, the “current regulations allow a lessee or operator to apply no controls whatsoever when its “proposed” BACT is claimed to be unfeasible. The proposed rule would make explicit that technically feasible controls would always be required but would allow much greater flexibility in how the relevant ERM are determined and evaluated.” (81 Fed. Reg. 19743).

This position contradicts the authority granted by OCSLA 43 U.S.C. § 1347(b), which requires that (emphasis added),

In exercising their respective responsibilities for the artificial islands, installations, and other devices referred to in section 1333 (a)(1) of this title, the Secretary, and the Secretary of the Department in which the Coast Guard is operating, shall require, on all new drilling and production operations and, wherever practicable, on existing operations, the use of the best available and safest technologies which the Secretary determines to be economically feasible, wherever failure of equipment would have a significant effect on safety, health, or the environment, except where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies.

As required by OCSLA, BOEM's ERM approach must consider the safety of the technology, as well as both economic and technical feasibility, when requiring the use of emission reduction measures.

Typically, offshore facilities have been designed and constructed to maximize space utilization, and extra space is often times not readily available for changes to existing equipment components. Consequently, it is not always technically possible to install and operate emission controls on OCS facilities. For example, many emission controls are dependent on adequate gaseous fuel conditioning, but space and weight constraints limit the available options for add-on gaseous fuel conditioning systems. OCS facilities must stay within overall weight and weight distribution limits to ensure they meet stability and buoyancy requirements required for safety purposes. These overall weight and space constraints limit the use of add-on emissions controls.

If emissions controls are added to a facility, then the weight and positioning of the additional equipment affects the facility's weight bearing capacity for other purposes, which can result in costs to resolve and/or limit certain facility activities that are integral to the function of the facility. Additionally, such added weight may require structural modifications (e.g. additional load bearing structures), which may or may not be possible, based on the design of the facility. When considering technical feasibility, BOEM must take into account the variability in types of facilities. What may be technically feasible for a production platform may not be feasible for a drillship.

In addition, technical feasibility determinations should consider the type of activity of the emissions unit. For example, while catalytic controls may effectively control power generation engines that operate at relatively steady load, the same controls may not be effective at controlling drilling rig engines or crane engines that operate at variable loads for short periods of time, because the engine would not consistently achieve the operating temperature required for catalytic controls to operate effectively. All these considerations must be accounted for when determining technical feasibility.

The costs of installing and operating emissions controls on offshore facilities are much greater than for corresponding onshore facilities, and per OCSLA, must be taken into account. These changes require significant amount of engineering, capital, and time. To retrofit such facilities requires a shipyard period of weeks to months for a mobile structure, or offshore equipment handling vessels and possibly production shut-ins for fixed structures. The costs to make these types of changes can be enormous, ranging from tens of thousands to millions of dollars.

In the preamble, BOEM proposes that "cost effectiveness would be the annual tonnage reduction estimate divided by the cost." (81 Fed. Reg. 19743). However, the basis of absolute tonnage conflicts with OCSLA's provision at OCSLA 43 U.S.C. § 1347(b) that control technologies are not required if the incremental benefits are clearly insufficient to justify the incremental costs. Given "BOEM's distinct mandate to focus on State impacts from OCS activities," the benefits must be based on improvements to onshore air quality, not absolute tonnage. (81 Fed. Reg. at 19730). Further, "BOEM's determination of what constitutes potentially significant emissions varies depending on a proposed facility's distance from shore."

The same basis should be used to determine cost effectiveness, wherein, the cost of controls must be justified by the incremental benefit to onshore air quality.

7.1.3 BOEM should develop a presumptive ERM program, but allow case-by-case ERM analyses.

Completing thorough and complete ERM analyses requires extensive time and effort on the part of offshore operators and reviewing those analyses requires considerable time and effort by BOEM staff. Given the similarities in the types of emission units associated with OCS operations and in the available technically and economically viable controls options, it would benefit the regulated community, and BOEM, if BOEM would establish and maintain an approved presumptive ERM data repository or clearinghouse that would fulfil the requirements of proposed §§ 505.306 and 550.307. Several states have established similar repositories of guidance documents for utilization by the regulated community when performing state BACT analyses. For example, the TCEQ provides extensive guidance on what is considered to be current state BACT for a large variety of industries and emission sources. Similar BOEM guidance would allow OCS operators to apply the presumptive ERM as part of plan submittals without having to provide the detailed and time consuming justification that would be required in an ERM analysis. Application of presumptive ERM as part of plan submittals would also reduce the time necessary for BOEM to review and approve plans.

However, as discussed above, because technical and economic feasibility may vary significantly between OCS facilities, any finalized rule or guidance must allow an option for OCS operators to prepare case-by-case ERM analyses, taking into consideration technical, economic, and safety considerations specific to their facility.

7.1.4 Offshore operators must have the flexibility to install emission reduction measures where it is most effective.

The ERM analysis process proposed in § 505.306(a)(1) requires the designated operator to “Identify all available control technologies relevant to the emissions of the pollutant(s) for which ERM is required.” Because the rule does not limit the ERM review to the largest emissions sources, operators would be required to evaluate control technologies for each emissions source that emits the pollutant for which ERM is required.

As discussed above, installing control technologies offshore is far more complicated and costly than for onshore due to safety considerations, the unique environmental conditions, the operational nature of the facilities (e.g. MODU load management during drilling), and space/weight constraints. Given that OCS facilities are external to the areas whose air quality they may affect, the distance between OCS facilities and the affected areas will impact the effectiveness of the control technology in terms of the incremental benefit to onshore air quality. Where OCSLA requires the use of best and safest control technology, the provisions apply “except where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies” (43 U.S.C. § 1347(b)). Emissions controls, at most, should be required only for the largest emissions units at a facility, where application of the ERM would result in sufficient incremental benefits to onshore air quality to justify the costs.

7.1.5 BOEM must establish a clear process to obtain emission reduction credits.

The proposed regulation allows the use of emissions credits as a component of ERMs. In concept, the flexibility to be able to use emissions credits for ERM purposes would be beneficial to OCS facilities. However, the practical application of emissions credits schemes requires establishing basic principles as part of the relevant implementing regulation. The following principal components appear to be missing from the proposed rule regarding the application of emissions credits:

- The establishment of a baseline period to be used to calculate the quantity of creditable emission reductions attributable to an emission source;
- The useful life of emission reduction credits from an emission source (i.e., does an emissions credit expire if it is not used after a certain time period?); and
- Due to the temporary nature of certain OCS sources when compared to typical onshore stationary sources, the establishment of whether emissions credits can be transferred when an OCS source that relied upon such credits discontinues operation.

Section 550.309(e) proposes requirements for emissions credits but the provisions are vague and unclear, for example, identifying areas where emissions credits may be obtained or what is meant by “net air quality benefit.” The preamble implies that the magnitude of the credit would equal that of the required reduction; however, the use of “net air quality benefit” indicates that the credit would have to achieve the same improvement to air quality (concentration). (81 Fed. Reg. 19733). BOEM must publish a revised proposed rule that establishes clear requirements relating to emissions credits with sufficient specificity to facilitate meaningful stakeholder comment.

Finally, BOEM must work with states and the regulated community to develop an OCS emissions credit banking database that would maintain records of available OCS-generated emissions credits, as well as emissions credits that onshore sources choose to include in BOEM’s banking database. By establishing an OCS emissions credit banking database and associated procedures for banking emissions credits in this database, BOEM would significantly streamline the implementation of an emissions credit program.

7.2 BOEM must clarify that designated operators can propose measures to limit projected emissions below the emissions exemption thresholds.

Under the current regulatory framework, designated operators may propose measures to reduce emissions to stay below EETs. One example of an operator-proposed measure is the use of historical fuel usage rates on emission sources or industry practices (e.g., limit engine operation to 65 or 80 percent maximum load capacity) rather than the more conservative approach of using equipment nameplate capacity to estimate equipment emissions. Another example is the use of projected operating durations rather than the more conservative approach of using calendar-year durations (24 hr/day; 365 day/yr) to estimate equipment emissions. Of course, both these examples have associated tracking and reporting requirements applied during the plan approval process to ensure compliance with the underlying assumptions.

In the preamble, BOEM suggests that under the proposed rule, “a lessee or operator may elect to propose ERM in its plan to ensure that its projected emissions are under the EETs described

in proposed § 550.303.” (81 Fed. Reg. 19757). Further, “BOEM expects lessees or operators are likely to consider operational controls to reduce emissions for many sources, for example limiting the hours of operation, reducing engine power, etc., in order to bring their projected emissions within the EETs.”

However, language in the proposed rule itself is not clear on this issue or on what additional requirements would apply. The proposed rule requires operators to calculate projected emissions based on the highest rated capacity of the emissions source, or the highest rate of emissions, and then compare projected emissions to the EETs to determine if further air quality review is required. The rule does not indicate that application of operator-proposed measures is permitted prior to comparing projected emissions to the EETs.

And, while § 550.309(f) proposes that “you may employ any operational control, equipment replacement(s), BACT, or emissions credit, on either a temporary or permanent basis, to reduce the amount of emissions that would occur in the absence of such measures”, and § 550.205(f) proposes that designated operators provide a description of proposed ERM and demonstrate that the ERM meet the requirements of § 550.309, the proposed § 550.205(o) and 550.303(e) state that plans that have emissions below the EETs are exempt from these sections.

Compliance with these types of proposed measures, such as limited fuel use or load capacity, operational controls and equipment replacement, would be demonstrated through the recordkeeping and reporting requirements in the approved plan. Also, the operator-proposed measures will be included and identified in BOEM’s AQR forms. As discussed in Section 7.1, BOEM’s proposed § 550.309 requires operators to provide detailed information regarding ERM that is generally not appropriate to these types of operational controls (e.g., control efficiency, continuous monitoring, etc.). Therefore, BOEM should not require facilities implementing operational controls and equipment replacement to provide the information proposed in § 550.309.

We support BOEM’s proposed intention to allow for designated operators to propose measures to reduce emissions below EETs, as stated in the preamble. However, the language in the proposed rule must be revised to reflect its intent.

7.3 ERM compliance provisions must account for startup operations.

The proposed requirement to demonstrate continuous compliance does not account for startup operations. Many types of emissions control technologies, such as oxidation catalysts, catalytic diesel particulate filters, and selective catalytic reduction, must be operated above certain temperature thresholds to effectively reduce emissions. For example, for an engine, the time necessary to reach the required operating temperature depends on the engine type, its size, its application, the size of the control device, ambient temperature, and the load imposed on the engine during the startup period. Sound technical reasons and documented regulatory determinations support providing a basis for relief during startup from emission limits based on controls that require engines or other types of emission sources to come up to temperature to effectively control emissions. Consequently, BOEM should account for these alternate operating modes in the ERM provisions.

7.4 BOEM cannot attribute mobile support craft emissions to facilities or impose indirect emissions controls on MSC.

As discussed in Section 1.2.4, proposed §§ 550.205(d)-(e) and 550.224(b) would impermissibly “attribute” all vessel emissions to the emissions of a facility. Because vessels are not “activities authorized” under OCSLA for the purposes of section 5(a)(8), they are beyond the purview of any rule BOEM might promulgate, such as application of ERM. However, BOEM’s ERM requirements, as proposed, will result in the regulation of emissions of platforms and drillships, and potentially MSC, to offset the emissions of “associated” vessels, which are outside the scope of BOEM’s jurisdiction.

OCSLA does not grant authority to regulate or require emissions controls for mobile vessels. As discussed in Section 1.2.4, this is clear from the plain language of OCSLA, which exempts vessels from the purview of OCSLA, as well as the clear intent of Congress included in the legislative history of the 1978 OCSLA amendments. The lack of jurisdiction over vessels has also been recognized by the courts. For example, in 2013, the 9th Circuit Court of Appeals observed that support vessels that are not “[p]ermanently or temporarily attached to the seabed,” or “[p]hysically attached to an OCS facility,” are not “regulated or authorized under the Outer Continental Shelf Lands Act.” *REDOIL v. EPA*, 716 F.3d 1155 (9th Cir. 2013); See 43 U.S.C. §§ 1332, 1333(a)(1).

Beyond the legal issues with these proposed requirements presented in Section 1.2.4, there are practical issues with requiring ERM on vessels that the lessee or operator neither owns nor controls. For example, determination of which party or parties would be responsible for implementing or paying for ERM would be problematic, and would be further complicated in cases where a support vessel services multiple facilities. Furthermore, OCS operators contract for services, but cannot be certain which vessel a contractor will assign – certainly not at the point plans are being developed and submitted. Finally, as discussed earlier, these vessels and associated emissions are regulated under other regulatory programs such as MARPOL and EPA Marine Tier programs.

As described above, the proposed rule would result in the regulation of and implementation of emissions controls on MSC, which is outside the scope of BOEM’s authority.

7.5 Increasing requirements for emission reduction measures could increase the demand for onshore emission reduction credits and the costs of credits could increase well above BOEM’s assumptions.

The average cost BOEM assumed for emissions credits does not reflect recent costs for emission reduction credits in ozone nonattainment areas near the Gulf of Mexico.

Because the EPA lowered the 8-hour ozone NAAQS from 75 ppb to 70 ppb in October 2015 (2015 ozone NAAQS), certain areas along the Gulf of Mexico coast are expected to continue their status as nonattainment areas, and be designated nonattainment with respect to the 2015 ozone NAAQS. This means the demand for onshore NO_x and VOC emission reduction credits in this region will likely continue – even without the additional demand created by BOEM’s proposed regulation. Furthermore, NO_x and VOC emissions reduction mandates associated with attainment plans for these areas, as well as the introduction of new standards for certain

facilities and the increasing stringency of existing standards for other facilities under 40 CFR part 60, could reduce the potential supply of onshore emissions credits available to OCS sources because these type of emissions reductions are not creditable. Moreover, NO_x and VOC emissions reduction mandates associated with attainment plans usually represent low cost emissions reductions available to affected sources, which in turn could increase the cost necessary to generate creditable NO_x and VOC emissions marketable to OCS sources.

Considering the recent costs of emission reduction credits in ozone nonattainment areas in the Gulf of Mexico region, the expected increase in demand for onshore NO_x and VOC emission reduction credits, and the potential decrease in the availability of low cost NO_x and VOC emissions reductions marketable to OCS sources, we believe the emissions credit cost analysis performed by BOEM considerably underestimates the cost of this emission reduction concept. Additional detail and analysis are provided in Appendix B.

7.6 BOEM should not require facilities to notify states to revise their State Implementation Plans.

Proposed § 550.309(e)(6) requires operators to notify states of a need to revise their SIPs when operators acquire emission reduction credits from onshore sources. We are not aware of any SIPs in the Gulf States or Alaska that include reductions in emissions from OCS sources as part of attainment demonstrations. Furthermore, we are not aware of requirements for onshore facilities to notify states when reducing emissions at a facility in order for the state to update its SIP. States and federal agencies will be notified of emissions reductions at onshore facilities through typical permitting processes; therefore, there is no need to provide this additional information to states. This creates a situation which is unnecessarily duplicative and redundant. As discussed in Section 7.1, BOEM must fully develop its emissions credits scheme prior to finalizing the rule, which would include a mechanism for states to access the emissions credits banking database.

Furthermore, the proposed requirement is vague. If BOEM elects not to remove this requirement, BOEM must clarify and specify what information and data the designated operator would be required to submit, and to whom.

8 Modeling Tools and Procedures

Based on the Bureau of Safety and Environmental Enforcement's (BSEE's) web site, there are more than 2100 active platforms in the Gulf of Mexico OCS. Proposed rule changes consolidating facilities, attributing MSC emissions to facilities, and introducing additional EETs are likely to significantly increase the modeling required for plan submittals and, potentially, recertification. As a result, the accuracy and appropriateness of air quality models available to designated operators will be ever more important. As outlined in this chapter, there are a number of issues that need to be addressed. Therefore, any proposed rule should wait until the outcome of BOEM's modeling studies in the Arctic and Gulf of Mexico are completed and peer reviewed.

8.1 BOEM's default dispersion models are not designed to address all the requirements of the proposed rule.

The current offshore modeling approach used by both EPA and BOEM for criteria pollutants involves the application of the OCD model to evaluate emissions from offshore sources within 50 km of the shoreline, and the CALPUFF modeling system for transport distances greater than 50 km. Both models are currently listed in Appendix A: Summaries of Preferred Air Quality Models to 40 CFR Appendix W of Part 51: Guideline on Air Quality Models.

In July 2015, EPA proposed to remove CALPUFF from the list of Preferred Models in Appendix W (80 Fed. Reg. 45340). In addition, EPA does not recommend the aerosol chemistry modules in CALPUFF for secondary aerosol formation. Because at present there is no replacement for CALPUFF, BOEM should allow its continued use even if EPA removes it as a preferred model in Appendix W. CALPUFF can still be used to evaluate direct emissions of criteria pollutants.

OCD is the currently recommended model for offshore distances less than 50 km. However, OCD has not been updated in many years and lacks several features making it difficult to apply for air quality assessments. Specifically, OCD:

- does not contain internal routines for processing either missing data or hours of calm meteorology. The existing postprocessor also cannot perform these tasks without modification.
- does not contain the Plume Volume Molar Ratio Method (PVMRM), Ambient Ratio Method 2 (ARM2) or Ozone Limiting Method (OLM) included as options in AERMOD for assessing the 1-hour NO₂ NAAQS.
- lacks the recommended methods for estimating design concentrations associated with the new 24-hour PM_{2.5}, 1-hour NO₂, and 1-hour SO₂ NAAQS. The current OCD postprocessor cannot perform these tasks without changes to the code.
- does not contain a volume source routine and the area source routine only considers circular areas without allowance for any initial vertical dispersion. Many different types of offshore sources are not easily simulated by the point source routine in OCD, such as support vessels that BOEM has proposed to include in modelling assessments.
- contains a shoreline fumigation model, but requires an overland meteorological data set that is difficult to prepare. The overland meteorological preprocessor is no longer

supported by the EPA and the meteorological data formats required by the preprocessor are no longer supported by the National Climate Data Center.

For recent permitting on the Alaska OCS, the EPA Model Clearinghouse approved a hybrid approach combining a new meteorological pre-processor called AERCOARE and the AERMOD dispersion model. However, this approach is not expected to be included in the upcoming changes to Appendix W and has not been approved for application to offshore facilities in the Gulf of Mexico. In addition, AERMOD without any revisions is not appropriate for offshore sources. Specifically:

- AERMET and AERMOD boundary layer formulation are based on standard overland parameterizations – stable at night, unstable during the day. That is not applicable for overwater dispersion characteristics. The stability depends on the difference between the air and water temperature. Overwater it is possible to have stable conditions 24 hours a day with warm air over cold water or have very unstable conditions 24 hours a day with cold air over warm water.
- The issues with the boundary layer formulation will also impact the mixing height depth calculation.
- A separate issue is the platform downwash issue. Platforms have 10 or 20 meters of open air under them and the building downwash calculations in AERMOD assume the structure is ground-based, which will overstate the downwash. This leads to overpredictions of concentrations near platforms.

Both CALPUFF and OCD are functional and can continue to be applied by skilled modelers, but both require upgrades or replacement if models are to be used to evaluate secondary aerosol formation, MSC, and the statistical nature of the short-term NAAQS for PM_{2.5}, PM₁₀, SO₂, and NO₂. We recommend that BOEM delay implementation of these additional rule modeling requirements until the models are updated.

EPA proposed in July 2015 to allow for the use of numerical weather prediction meteorology where no representative observed meteorology exists, or where it is difficult to measure. As part of its Gulf of Mexico and Arctic studies, BOEM is currently conducting a model performance evaluation to show equivalent performance between the Weather Research Forecast (WRF) - driven AERMOD/CALPUFF and WRF-driven OCD. The proposed rule and new EET development should wait until these studies are complete and new regulatory modeling procedures are recommended.

8.2 Expensive and complex photochemical modeling is not warranted. BOEM has not demonstrated that OCS ozone and PM_{2.5} precursor emissions significantly impact onshore air quality such that attainment or maintenance of the NAAQS are threatened.

As detailed in our comments on the IRIA (see Appendix B), photochemical modeling is an expensive and complex technical undertaking. The proposed rule would require photochemical modeling of ozone and PM_{2.5} in the event precursor EETs are exceeded and an “appropriate” photochemical model is available (§ 550.304(b)).

However, BOEM has not provided any study or evidence to demonstrate that offshore emissions significantly affect PM_{2.5} and ozone concentrations onshore or within the state

seaward boundary. In fact, as discussed in Section 2.3.1, all the SIPs developed by the states bordering the Gulf of Mexico and Alaska, show OCS-based contributions to onshore pollutant concentrations as small. In all cases, the SIPs indicate that the states responsible for achieving NAAQS compliance do not consider OCS sources to be significant contributors. Until such a demonstration is provided, there is no justification for requiring facilities to perform complex photochemical modeling to address PM_{2.5} or ozone compliance with the NAAQS. Any additional requirements are premature until the studies discussed above are complete.

8.3 Proposed method for modeling MSC.

Notwithstanding BOEM's lack of authority to regulate mobile support vessels and our objection to modeling such vessel emissions, the line source method proposed by BOEM is inappropriate. Unlike a busy roadway or a long conveyor belt, which have constant emissions along a line, vessel emissions at a given location are short-lived and not easily assessed as area, line, or even volume sources.

MSC would be more appropriately included as volume sources or thin area sources placed along a transport route as is the case recommended by EPA for roadways or as an area source when the vessels are distributed within a general area of activity. However, the current offshore regulatory model OCD cannot simulate volume or area sources. While OCD could be used to simulate pseudo point sources placed along expected vessel paths, the number of point sources required to accurately characterize such emissions is outside the capabilities of the model. So in addition to the spatial issues involved in distributing the vessel emissions, arbitrary assumptions are needed to temporally distribute such emissions over the distance travelled for each NAAQS averaging period.

Regardless of the modeling technique applied, there are difficulties at the EP, DPP, and DOCD stage specifying which vessel(s) will serve a facility or what its route will be. Near shore, potential impacts are highly dependent on the routes taken by the vessels and the release characteristics and emissions of each vessel. As discussed in Section 3.3, neither the vessel nor the route is likely to be known at the time of plan submittal.

8.4 BOEM's proposed requirement to model mobile support vessels is geographically boundless.

BOEM's proposed rule requires MSC emissions to be considered as long as the MSC is involved in activities supporting the facility, which BOEM asserts should include emissions from the time the vessel leaves port until the time it returns to port. The "port" could be hundreds of miles away in the Gulf of Mexico and would be more than a thousand miles away in Alaska. This is analogous to asking a refinery to evaluate ship emissions from the point where crude oil is loaded until it arrives at the refinery and from the refinery to the port where product is delivered.

Furthermore, it is not clear where impacts must be assessed. The proposed rule suggests vessels supporting Alaska OCS operations in the Beaufort and Chukchi seas would be required to assess emissions and impacts for the entire 1,500-mile voyage to and from Dutch Harbor, their nearest supply port. As discussed in Section 1.2.4 and in Chapter 3, BOEM lacks authority

to regulate vessel emissions and requirements for emissions assessment and modeling are unlawful as well as impractical.

Another critical issue is whether an air quality assessment of vessel emissions would be required to demonstrate compliance at the hull of the ship when a vessel crosses the state seaward boundary. OCSLA does not grant Interior authority to regulate activity outside the OCS, but the proposed rule implies operators would be required to model vessels within the state seaward boundary.

8.5 BOEM's proposal for VOC and NO_x waivers is incomplete.

NO_x and VOC waivers are allowed by EPA under § 182(f) of the CAA for nonattainment areas within an Ozone Transport Region where it can be demonstrated local emissions within an AQCR would not exacerbate existing ozone concentrations. In such instances, local ozone concentrations exceeding the NAAQS are caused by transport within a multistate region upwind. Petitions for waivers to EPA include weight-of-evidence arguments using photochemical modeling, monitoring data, and qualitative descriptions of the effects of local NO_x and/or VOC emissions on ozone formation. Typically, such waivers are obtained for an AQCR to exclude control requirements set forth in a SIP for a much larger area.

BOEM has included this concept for VOC and NO_x waivers in § 550.307. Given that BOEM regulates offshore sources not within an AQCR or a nonattainment area, some adjustments to the onshore waiver programs would be required.

However, prescriptive portions of the proposed rule requiring controls based on NO_x and/or VOC emissions should always be waived if applicants can present an analysis showing such controls would not have significant air quality benefits or would not be required to comply with the NAAQS.

8.6 The procedure for determining background concentrations is critical and must be developed in coordination with the regulated community.

Section 550.304(e) of the proposed rule addresses how background concentrations are to be added to model predictions to determine total concentrations. At § 550.304(e)(2)(i), BOEM states applicants "must use the data provided by BOEM" if BOEM has established "appropriate" background concentrations.

Prior to that process, BOEM needs to propose the procedures it will use to establish background air quality concentrations because there are a number of critical factors. These include: the statistics to be applied to the measurements; data filtering procedures to remove the influences of nearby sources; data stratification parameters to be used, such as stratification by season and hour; and procedures for use and filtering of shoreline data by wind direction to assess onshore versus offshore source influences.

There needs to be flexibility in establishing background concentration because the closest monitoring station is not necessarily the most relevant. Existing ozone monitoring locations along the Gulf coast likely over-state background ozone at the State's seaward boundary because they are influenced by land-based emission sources. For example, in the Houston-

Galveston-Brazoria ozone nonattainment area, the ozone monitor that is closest to the Gulf is located on Galveston Island (EPA site number 48-167-1034). This monitor is located closer to petrochemical facilities in Texas City than to the nearest State seaward boundary. Similarly, in the Beaumont/Port Arthur area, the Sabine Pass ozone monitor (EPA number 48-245-0101) is located closer to petrochemical facilities in Port Arthur than to the nearest State seaward boundary. Such monitors are not representative of the larger Gulf of Mexico area.

There may also be situations where monitoring data are not available or are otherwise unsuitable as background values. In this case, we request that BOEM provide operators the option of using scientifically supported modeling data to estimate background concentrations.

8.7 Regional emission inventories for existing sources and increment consuming sources have not been developed and will be impractical for each operator to develop.

As discussed in Section 2.2, we maintain that OCSLA does not authorize BOEM to require evaluations of AAI because such metrics are not relevant to demonstrating compliance with NAAQS. Nonetheless, in the event that BOEM retains a requirement for increment evaluation, BOEM must provide a regional baseline emissions database to allow modeling of the baseline concentrations and increment consumption. This is a very complex undertaking, and it is unreasonable to require an OCS plan to compile such information.

We also note that onshore sources conducting an increment evaluation under EPA's PSD program are not required to include OCS source emissions. That implies State agencies do not consider OCS sources to significantly consume increments. Consequently, it seems inappropriate to require OCS sources to conduct an onshore increment analysis themselves.

8.8 BOEM's proposed method for comparing model predictions to AAIs is unclear and unnecessarily complicated.

As discussed in Section 2.2, we maintain that OCSLA does not authorize BOEM to require evaluations of AAI because such metrics are not relevant to demonstrating compliance with NAAQS. Nonetheless, in the event that BOEM retains a requirement for increment evaluation, we request that BOEM simplify its AAI compliance assessment.

BOEM's proposed rule uses comparisons to the AAIs based on a 12-month rolling average. Compliance would be indicated when the AAI is not exceeded more than once within any rolling 12-month period. Typically, EPA assesses compliance with the AAIs and NAAQS using calendar block averages, not running or rolling averages. This is a much simpler procedure than what BOEM proposes.

If BOEM maintains its requirement for rolling averages, BOEM needs to clarify exactly how the rolling averages should be calculated. For example, BOEM should confirm for a 24-hour average whether the running average is adjusted by one hour or one minute for each period. Within an 8760 hour year there would be $8760 \div 24 = 365$ 24-hour periods using a running average incremented by an hour.

BOEM also needs to clarify what it means by a 12-month period. Typically, EPA assesses AAls using calendar years over multiple years or in some instances a single 12 month period when meteorological data are collected from an on-site program that does not start on January 1st. BOEM must indicate if the 12-month period is calculated every hour, day, or month within a modeling period greater than a month. The request for a rolling average compliance demonstration adds an extra burden to post-processing the model results that is not included in most modeling systems. Such uncertainty could lead to considerable modeling costs of questionable value that have not been anticipated by the agency.

8.9 BOEM should limit the domain of the modeling assessment.

BOEM specifies in § 550.205(g) and in part in § 550.304(e) that a plan applicant must provide concentration estimates in any area of any state. This requirement implies an unlimited modeling domain and needs to be constrained to the area potentially affected by OCS sources.

We acknowledge the need to identify maximum facility concentrations in attainment and nonattainment areas, and the need to demonstrate compliance with the NAAQS in attainment areas. However, the focus of a modeling assessment should be on the points of maximum impact, not distant locations that are less-affected. We recommend that BOEM limit the domain of the required modeling to coastal areas, which are defined in proposed rule language in Appendix A as follows:

Coastal area of any State means the inland area up to 25 miles of the shoreline where the shoreline refers to the nearest mean high water mark of a State. A lesser distance may be acceptable if the modeling analysis demonstrates that maximum concentrations occur closer to the shoreline.

8.10 BOEM should clarify the process and requirements associated with modeling protocols.

Under § 550.304(a)(2), a modeling protocol and associated data must be submitted to BOEM prior to conducting the analysis. BOEM needs to clarify the content of the protocol and the schedule for review and approval of the protocol. It would improve consistency of content and efficiency of preparation and review if BOEM were to provide a template or framework for the protocol. It would also be helpful if an applicant could submit a protocol that adopts a standardized protocol and identifies only where the modeling analysis would deviate from that standard.

In many instances, the methods and data evolve as the modeling analyses are being conducted, so allowances must be identified for changes. Furthermore, in many instances modeling analyses for similar facilities and modifications to an existing facility would use the same modeling techniques and assumptions as the previous analysis. Therefore, applicants should be allowed to reference a previous protocol to avoid the delay associated with the submittal and review of a protocol for each application.

9 Defining “Significantly Affect”

OCSLA authorizes BOEM to regulate emissions associated with offshore oil and gas exploration, development, and production activities when they “significantly affect” onshore air quality such that attainment or maintenance of the NAAQS is threatened. In response, BOEM developed its current AQRP that first assesses the potential for air quality impacts using a screening procedure. That procedure requires applicants to compare annual emissions from proposed facilities with emissions thresholds that depend on the distance from the OCS facility to the shore. If facility emissions of an air pollutant exceed the relevant criteria, dispersion modeling must be conducted to determine whether the predicted onshore concentrations are “significant.” Under this system, “significant” was used as a proxy for attainment with the NAAQS, and facilities that had a “significant” effect on air quality were subject to emission controls.³⁴

Current and proposed BOEM regulations cite SILs that were developed by the EPA in the 1970s as part of its program to prevent deterioration of air quality in areas attaining the NAAQS. BOEM’s current regulations require application of BACT to the OCS facility when dispersion modeling indicates onshore concentrations exceed the SIL established for a pollutant. The SILs BOEM applies are for annual NAAQS.

The proposed rule also requires dispersion modeling of criteria and precursor pollutants if emissions exceed EETs. Criteria for emission reduction measures are triggered when modeled pollutant concentrations exceed a SIL, either for a short-term or annual NAAQS. BOEM proposes to apply separate impact criteria for short-term and long-term facilities and for effects to attainment versus non-attainment areas when modeled pollutant concentrations exceed the SILs:

- For a short-term facility affecting an attainment area, the applicant must conduct an ERM analysis and implement operational controls that are technically and economically feasible. If no technically feasible operational controls can be implemented cost effectively, then no ERM will be required.
- For a short-term facility affecting a nonattainment area, the ERM process is the same as above. However, if a facility proposes that no technically feasible operational controls are cost effective, BOEM may require the implementation of other ERM, including BACT.
- For a long-term facility affecting an attainment area, the applicant must apply ERM, excluding BACT, for VOC and criteria pollutants. The applicant must also demonstrate compliance with AAls and NAAQS and apply additional ERM if necessary to achieve that compliance.
- For a long-term facility affecting a nonattainment area, the applicant must employ BACT for VOC and criteria pollutants. Applicants must apply additional ERM such that VOC emissions are less than the EETs and model-predicted criteria pollutant concentrations are less than the SILs and total concentrations comply with NAAQS.

³⁴ The modeling requirement does not apply to VOC emissions under the current rule and does not apply to VOC emissions under the proposed rule until BOEM’s Gulf of Mexico science studies are completed.

Although the consequences of affecting an onshore area are identified, BOEM does not define “affect.” We address that omission in this chapter, but first respond to BOEM’s request for comment on how it should treat interim SILs or pollutants/averaging times for which EPA has not established a SIL.

9.1 BOEM should adopt its own SILs.

As discussed in Section 2.1, BOEM has a different mandate than EPA and has no obligation to adopt EPA procedures or EPA impact criteria other than the NAAQS. BOEM adopted EPA SILs for the current air quality regulation, but EPA has not promulgated SILs for all criteria pollutants and averaging times.

We propose that BOEM continue applying only the promulgated EPA regulatory SILs (40 CFR 51.165(b)(2)) until the Gulf of Mexico and Alaska regional air quality studies are completed. If those studies conclude that changes to the AQRP are warranted, the results of the studies may inform selection of appropriate SILs. There does not appear to be a particular standard or formula used by EPA to establish SILs, as they range from 1 to 5 percent of the NAAQS. BOEM has the option of identifying SILs based on a scientific rationale, or some percentage of the NAAQS it deems to be significant. Selection of SILs is another opportunity to involve the regulated community.

If BOEM elects to continue use of EPA SILs, we recommend that BOEM adopt, in lieu of any EPA interim SILs, SILs set at no less than 5 percent of the applicable NAAQS. When EPA promulgates a SIL that is incorporated in the affected state’s SIPs, then the new regulatory SIL would apply.

9.2 In nonattainment areas, BOEM should define “affect” as exceeding a SIL at an onshore location.

BOEM should continue its current policy of requiring emission reductions when model-predicted concentrations in nonattainment areas attributable to an OCS source exceed a SIL. This policy is appropriate because OCSLA requires that OCS sources that have a significant effect on onshore air quality not cause or contribute to violations of a NAAQS.

However, the proposed rule, perhaps inadvertently, requires that a NAAQS analysis be conducted even after application of ERM demonstrates that predicted impacts are below any applicable SILs. Proposed section 550.307(b)(2) requires that, after demonstrating that no SILs are exceeded, “...you must then conduct the analysis described in § 550.307(b)(1)(vi).” Section 550.307(b)(1)(vi) requires ERM until compliance with NAAQS is demonstrated. This is clearly impossible if the area is nonattainment and local monitoring stations continue to show violations of the NAAQS, as reductions in OCS emissions could not fix what is most likely a local onshore emissions problem.

We have proposed in Appendix A that BOEM modify the proposed rule text at § 550.307(b)(2), including deleting the last sentence that references § 550.307(b)(1)(vi).

To further clarify the requirements for assessing air quality impacts in a nonattainment area, we recommend that BOEM define “Affect the air quality of any State” as applied in nonattainment areas as follows:

The air quality of any State coastal nonattainment area is considered to be affected by an OCS source when a model-predicted onshore concentration attributable to emissions from the OCS source exceeds a SIL.

9.3 In attainment areas, BOEM should define “affect” as exceeding a SIL and a corresponding NAAQS.

BOEM's current use of the SILs appears to be borrowed from EPA's PSD permit process. In EPA's program, if predicted concentrations are less than the SILs, the project impact is assumed to be insignificant with respect to increments and NAAQS and no further analysis is warranted. If predicted concentrations exceed the SILs, the applicant must conduct a cumulative analysis to determine compliance with NAAQS.³⁵ Thus, for attainment areas, the SILs are utilized only to determine whether the potential impact warrants a cumulative analysis.³⁶ BOEM has no obligation to apply EPA programs, but this general approach is also appropriate for evaluating whether OCS source emissions significantly “affect” onshore air quality.

Although ERM are appropriate when concentrations attributable to OCS sources exceed SILs in nonattainment areas, the Alaskan coastal areas of the Chukchi and Beaufort seas and the coastal areas of Louisiana, Mississippi, Alabama, and most of Texas are attainment areas for all criteria pollutants.³⁷ Attainment areas can accommodate a greater increase in pollutant concentrations before compliance with ambient air standards are a concern. Consequently, in most attainment areas, the SILs are too stringent a threshold for requiring ERMs.

A SIL associated with the 1-hour NO₂ NAAQS has not been promulgated and BOEM's current policy is to require Gulf of Mexico applicants to add a representative background concentration to the model-predicted NO₂ concentration attributable to facility emissions to evaluate compliance with the NAAQS. Unless the cumulative impact (background plus facility) exceeds the NAAQS, emission controls are not required.

We believe that this is the most appropriate way to determine if an OCS facility has significant onshore air quality impacts that affect compliance with the NAAQS, and thus whether emissions controls are warranted. We therefore recommend that the approach identified above be applied to all criteria pollutants that are emitted from a facility at quantities exceeding an EET. This approach takes into consideration existing air quality conditions onshore, which are critical to

³⁵ Note that EPA's cumulative analysis requires modeling of regional sources and the addition of a background concentration. This double counts contributions from regional emission sources because the effects of those emissions should already be accounted for in the background concentrations.

³⁶ BOEM's current program deviates from EPA's program in this regard in that it requires application of BACT if concentrations exceed SILs. EPA only requires additional analysis.

³⁷ The only nonattainment areas along the coasts of the western and central Gulf of Mexico are the Houston -Galveston-Brazoria ozone nonattainment area and the St. Bernard parish SO₂ nonattainment area. Both nonattainment areas are dominated by onshore industrial emissions.

understanding whether emission control is warranted to comply with onshore NAAQS. This policy is consistent with the intent of Congress that controls only be required where needed to ensure compliance with NAAQS. 43 U.S.C. § 1334(a)(8); 1978 U.S.C.C.A.N., 1674, 1684-1685. Furthermore, unlike SILs, NAAQS are established for all criteria pollutants and averaging periods.

In summary, we recommend that BOEM define “Affect the air quality of any State” as applied in attainment areas as follows:

The air quality of any State coastal attainment area is considered to be affected by an OCS source when emissions from that source result in a model-predicted onshore concentration that exceeds the SIL and the modelled concentration plus background concentration exceeds the NAAQS.

9.4 Emission reduction measures for VOCs should not be required unless BOEM’s ongoing studies conclude there is a significant onshore impact.

For criteria pollutants, BOEM requires modeling of pollutants that exceed EETs. Modeling determines whether the emissions affect the onshore air quality and whether emission reductions are required.

Because BOEM has yet to determine that photochemical modeling tools are available, it eliminates the modeling step for VOCs, a precursor to ozone formation, and requires ERM when emissions exceed the VOC EET. Thus, the proposed rule regulates VOC emissions without any demonstration of impact to onshore air quality. As discussed in Section 1.2.2, this is contrary to BOEM’s authority.

Consequently, BOEM should delete the requirement for VOC ERM based solely on an exceedance of an emissions threshold. At a minimum, VOC ERMs should not be required until scientific studies now underway in the Arctic and the Gulf of Mexico conclude that emissions from offshore facilities are having a significant effect on onshore attainment or maintenance of the ozone NAAQS.

10 Reauthorization of Plans and Plan Revisions

BOEM's proposed regulation would require lessees to resubmit previously approved plans at least every 10 years to verify compliance with BOEM's current air quality regulations. As proposed, all of the applicable requirements in effect on the date of resubmission would apply on the same basis to a resubmitted plan as for an initial plan. See Proposed § 550.284; § 550.303(g); § 550.309(d); § 550.310(c). Proposed § 550.310(c) does not specify the consequence that will follow if BOEM is dissatisfied with the resubmitted plan, but the proposal suggests that failure to resubmit a plan could result in revocation of the lessee's existing plan.

Although existing leases are generally subject to amended regulations over time, compliance with successive iterations of the air quality regulations promulgated under section 5(a)(8) alone is not grounds for resubmission and additional approval, on new and far more onerous terms, of existing EPs, DPPs, and DOCDs. As discussed in Section 1.3.2, BOEM may not change its regulations to avoid the consequences of what would otherwise be a breach of contract. Section 1.3.2 also notes that OCSLA authorizes BOEM to review an existing plan only "based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan." 43 U.S.C. § 1351(h)(3).

Accordingly, BOEM should not require resubmission and additional approval of existing plans. At a minimum, BOEM should clarify that (1) the resubmitted plan will be reviewed for continued compliance with onshore NAAQS, and (2) additional conditions will be imposed only where an OCS operation is "significantly" affecting the air quality of a state and preventing attainment or contributing to continued nonattainment of onshore NAAQS.

10.1 Current regulations and procedures assure continued compliance with NAAQS.

BOEM's current AQRP has accomplished the Congressional mandate of allowing the development of OCS resources while ensuring continued compliance with the NAAQS. Every proposed EP, DPP, or DOCD is subject to time-tested procedures that consider the magnitude of air emissions against the distance to the shoreline. In some cases, air dispersion modeling is conducted that demonstrates a *de minimis* impact to onshore air quality. In other cases, applicants implement operational controls or install control equipment such that the facility described in the plan is either exempt from modeling or the modeling of controlled emissions meets regulatory criteria.

This initial review must be based on potential emissions from the proposed facility. Potential emissions are calculated assuming equipment is operating at its maximum anticipated rate and applying conservative factors to estimate emissions. In some scenarios, operators may propose measures to reduce emissions to stay below EETs. In actual operation, engines and other equipment operate at rates well below maximum and actual emission factors are lower than the conservative default values that BOEM encourages. Consequently, the emissions and potential onshore impacts found in plans are typically much greater than those that actually occur. In addition, contributions from existing facilities are accounted for in background concentrations when new facilities conduct air quality modeling to demonstrate compliance with the NAAQS.

Furthermore, significant changes in the facility equipment or its operation are already subject to review (e.g., § 550.283(a)(4) requires resubmission of AQRs to account for emission increases, and BSEE inspections offshore typically compare approved AQRs to installed equipment). Absent such changes, there is no compelling reason to re-evaluate the facility on a periodic basis because the initial analysis will still be a conservative assessment of potential air quality effects and existing requirements ensure oversight for changes.

Outside of the plan approval process and BSEE inspections, the air emissions from existing OCS facilities are already subject to periodic review because BOEM conducts a cumulative impact analysis when it proposes additional leasing of offshore areas and approves additional plans.

Finally, the current rule provides BOEM with the ability to review existing facilities in the rare case where a state submits information to the Regional Supervisor that indicates that emissions from an existing facility may be significantly affecting the air quality of the onshore area of the state (§ 550.304 of the current regulation). In that case, the Regional Supervisor will review the available emissions data and make a determination as to whether the existing facility has the potential to significantly affect the air quality of an onshore area. If the existing facility does have the potential to significantly affect the onshore air quality of a state and threaten compliance with NAAQS, then BOEM can require the operator to evaluate facility emissions under that AQRP and apply controls.

For all these reasons, we believe the current program is protective of onshore air quality and that BOEM should not require plan resubmittals.

10.2 Resubmittal, review, and reauthorization of plans will require significant contractor and BOEM staff time.

There are also practical considerations when requiring periodic plan resubmittals. When EPA implemented its Title V Air Operating Permit program in the 1990s, existing major sources were required to submit permit applications by a specified deadline. State and local agencies were overwhelmed by the volume of applications that required their detailed analysis and careful drafting of new permits. It took years for the agencies to address the backlog of applications. Because air operating permits must be renewed every five years, agencies face a recurring barrage of applications near the anniversaries of the initial deadline. This task has become a significant workload for the state air agencies.

Implementation of a requirement for periodic review of existing facility plans would require operators to hire consultants to repeat work that was already reviewed by Interior. Because there are several thousand facilities in the Gulf of Mexico, BOEM would have to significantly increase its staffing to address analyses that offer very little added benefit to onshore air quality.

We also note that the construction permits (i.e., PSD) that EPA issues to industrial sources do not require renewal, and are valid as long as no major modifications occur at the facility.

10.3 Emissions from existing facilities are accounted for in background concentrations.

As discussed in Section 4.1, when emissions from proposed facilities exceed EETs, BOEM's proposed modeling procedure requires applicants to apply approved air quality models to calculate onshore concentrations attributable to the proposed facility. To demonstrate compliance with NAAQS, modeled concentrations are added to existing "background" concentrations to determine cumulative concentrations. This simple procedure accounts for emissions from existing OCS and onshore facilities as part of the background concentration, and provides a cumulative impact analysis. These analyses, which would likely be required for the majority of new facilities (see Section 6.5) and the cumulative analyses BOEM conducts in its lease sale and plan-specific NEPA analyses, ensure that OCS facilities are not causing exceedances of the NAAQS onshore. BOEM's proposal to require re-modeling of existing facilities every ten years is unnecessary.

10.4 Retrofitting existing operational facilities to meet new regulatory requirements is costly and in some cases may not be technically possible.

It is not always technically possible to install and operate emission controls on existing OCS facilities. OCS facilities must stay within overall weight and weight distribution limits to ensure they meet stability and buoyancy requirements required for safety purposes. Typically, offshore facilities have been designed and constructed to maximize space utilization, and extra space is often times not readily available for changes to existing equipment components. These overall weight and space constraints limit the use of add-on emissions controls. If emissions controls are added to a facility, then the weight and positioning of the additional equipment affects the facility's weight bearing capacity for other purposes, which can result in costs to resolve and/or limit certain facility activities that are integral to the function of the facility. Additionally, such added weight may require structural modifications (e.g. additional load bearing structures).

Furthermore, the costs of installing and operating emissions controls on offshore facilities are much greater than for corresponding onshore facilities, and per OCSLA, must be taken into account. To retrofit such facilities requires a shipyard period of weeks to months for a mobile structure, or offshore equipment handling vessels and possibly production shut-ins for fixed structures. The costs to make these types of changes can be very large, in the tens of thousands to millions of dollars.

10.5 BOEM should clarify the requirements for plan revisions.

The proposed rule language in § 550.280 and § 550.303 raises some issues for clarification regarding the requirements for plan revisions.

Section 550.280(a) states:

Compliance. You must conduct all of your lease and unit activities according to your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application, and any approval conditions. You may not install or use any facility, equipment, vessel, vehicle, or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application, and you may not install or use a substitute for any emissions source described in your EP, DPP, DOCD, or RUE, pipeline

ROW, lease term pipeline application, without BOEM prior approval. If you fail to comply with your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application:

While § 550.303(g)(4) states

If you propose to make a change to the equipment on your existing facility or facilities in a year or years where your plan already anticipated operations, and your proposed change would result in an increase in air pollutant emissions from that equipment for any air pollutant, you must submit a revised plan.

The language presented in § 550.280(a) would prevent an operator from replacing a piece of equipment without BOEM approval, even if the replacement would not result in an increase in emissions. This could extend to routine maintenance of a facility where there is no increase in emissions, such as the replacement of a valve. BOEM should revise § 550.280(a) to specify that the condition does not apply to the installation or use of equipment that does not result in an increase in annual air pollutant emissions and does not apply where the proposed activity is determined to be an insignificant activity, as discussed in Section 12.2.

11 Monitoring, Recordkeeping, And Reporting

BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. As explained in sections 1.2.4 and 1.3.1, BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, BOEM should, at a minimum, reduce the monitoring, recordkeeping, and reporting burden to reflect the minimal impact OCS operations have on onshore air quality as follows.

11.1 BOEM should clarify what types or designs of emissions monitoring systems would be acceptable under the proposed rule.

Parametric Emissions Monitoring Systems (PEMS) are referenced in the preamble of the proposed rule (81 Fed. Reg. 19745) as an option for monitoring emissions, but the rule text in § 550.311 does not specifically reference PEMS nor clarify which specific emissions monitoring equipment will be required by the proposed rule. Actual emissions monitoring could include Continuous Emissions Monitoring Systems (CEMS) or PEMS.

Based on discussions in the preamble and the IC Burden Table (81 Fed. Reg. 19790) costs analyzed by BOEM, one might assume that BOEM will likely require PEMS but that is not stated specifically in the proposed rule. Given the harsh and remote environments that OSC sources operate in, CEMS/PEMS would be susceptible to frequent outages and downtime and would be extremely costly to install and maintain. Therefore, we believe that CEMS/PEMS should only be considered when other more reasonable monitoring methods are not appropriate. In most instances monitoring facility fuel usage and hours of operation would provide ample data to accurately estimate emissions.

Additional data would have been provided as part of this comment package; however, because there was not an ANPRM, the regulated community did not have an opportunity to research and analyze possible monitoring options.

11.2 BOEM should limit monitoring to sources subject to BACT requirements.

As currently written, the proposed regulations do not stipulate which specific sources will require emissions monitoring. Specifically, as stated in proposed § 550.311(b)(2) “BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment.”

Also, as discussed above, the specific emissions monitoring systems to be employed to monitor actual emissions has not been specified in the proposal. Actual emissions monitoring could be a CEMS or PEMS. Costs for installation and maintenance of monitoring equipment such as CEMS/PEMS, fuel meters, hourly load capacity monitors, etc. are significant (see Appendix B). As such, the use of PEMS/CEMS and other monitoring equipment on most emissions sources located on MODUs, platforms and MSC would not be cost effective or operationally reliable due to the harsh environment in which this equipment operates. It should also be noted that the CEMS/PEMS are highly sophisticated electronic equipment that require highly skilled and certified technicians to maintain and service. As OCS facilities will operate in remote areas of

the Alaska OCS or Gulf of Mexico, up to hundreds of miles from the nearest shoreline, it could take days to get a service technician to the MODU or platform and the CEMS/PEMS operational, not to mention the cost incurred due to the service call-out.

Therefore, actual emissions monitoring and other parametric monitoring should only be considered for large sources where BACT controls have been implemented to ensure compliance with the NAAQS. Such monitoring measures would only be employed when other more reasonable monitoring measures such as fuel usage or hours of operation are inadequate to ensure compliance.

To ensure accurate, reliable and cost effective monitoring, and to be consistent with the provisions of proposed § 550.205(k), BOEM should allow applicants to submit a monitoring and recordkeeping plan which would include a description of how the applicant proposes to monitor emissions. This would allow the applicant to determine which parameters are best suited to ensure proper control equipment performance. Where the applicant proposes to use EPA or IMO-certified engines, BOEM should not require additional monitoring or source test requirements because the certification process requires the engines to meet performance criteria for the useful life of the engine as long as manufacturer-recommended maintenance is completed.

Furthermore, proposed § 550.311 identifies the conditions under which additional emissions reporting is required. BOEM should revise the proposed rule such that additional reporting will not be required for pollutants for which facility emissions are below the EET or demonstrated onshore impacts well below NAAQS. These facilities clearly are not causing or contributing to an exceedance of the NAAQS in any State, and the additional monitoring and reporting burdens are not warranted.

Proposed § 550.311(b)(1) also requires emissions measurement and reporting of every source that was included in an approved plan in addition to any source that would be classified as part of projected emissions if the plan were resubmitted under the current regulations. In effect, this provision requires a reopening of the approval conditions for existing facilities and conceivably revises the approval conditions without any approval process. BOEM should not require collection of information from existing facilities to demonstrate compliance with requirements established after their plan was approved.

11.3 Emissions testing should only be conducted on the largest emissions units and then only initially and following a physical modification.

Proposed § 550.312(a) requires emission testing every three years if such testing was used to develop emission factors under proposed § 550.205 for a submitted plan. In most onshore permits and source test provisions contained in federal standards, emissions testing is limited to major emissions units and is limited to an initial test and subsequent tests only if the unit is physically modified and emissions from previous test results are no longer representative. Emissions testing is far more complicated offshore than onshore due to safety considerations and space constraints, and should be limited accordingly. Considering the remoteness of the OCS facilities, and the safety considerations and space constraints, if a facility chooses to conduct emissions testing to develop emissions factors, the emissions testing should (at most)

be required only for the largest emissions units at a facility and then only initially with subsequent testing only required if the emission unit is physically modified and previous test results are no longer representative.

11.4 BOEM should exempt certain equipment from monitoring, recordkeeping and reporting.

The level of detail the proposed rule requires is a significant concern. It may be appropriate to include significant sources of emissions (e.g. large stationary engines) that account for the majority of OCS air emissions. However, it is not practical to include small, insignificant sources that do not materially contribute to overall facility emissions, as the environmental benefits do not outweigh the significant resources and costs associated with recordkeeping, reporting and monitoring efforts.

To address this issue, we have prepared a list of “insignificant activities” that we propose would not be included in a plan or any associated emissions inventories. We propose to add a definition of insignificant activities in the form of a table in § 550.105 (see Appendix A). The insignificant activities definition includes a detailed list of activities that do not significantly contribute to emissions at an OCS facility, much less create an adverse impact to air quality onshore. We recommend that BOEM consider inclusion of this definition and the list of insignificant activities to ease the planning, monitoring and reporting burden associated with the proposed rule, as well as ensure that the focus is properly applied to the comparatively larger emissions sources.

11.5 The 10 year recordkeeping requirements of § 550.187(a) and § 550.312(b)(1) as well as the proposed recordkeeping requirements in § 550.205(j) are unjustified.

Proposed § 550.187 requires offshore operators to collect and maintain information regarding all air pollutant emissions from all emissions sources associated with their operations for a period of no less than ten years. Furthermore, proposed § 312(b) requires that offshore operators collect and maintain fuel log and activity data monthly for each emission source for a period of no less than ten years.

There is an information collection (IC) burden for the maintenance of records for ten years, which is greater than typical retention requirements for facilities under EPA or State agency jurisdiction. There is also a “non-hour” cost associated with this requirement. Maintenance of electronic records is not free and given the substantial increase in recordkeeping requirements for each plan, this burden could be substantial. The IC burden associated with recordkeeping activities could be reduced if BOEM followed typical retention policies of other State and Federal agencies, which typically require facilities to retain information for periods ranging between two and five years. As documented in Appendix A, we request that this period be reduced to no more than the shorter of five years or the life of the plan, whichever is shorter.

Although proposed § 550.205(j) requires lessees to “maintain” records of any data or information “establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate their projected emissions,” it does not indicate how long these records must be maintained. (81 Fed. Reg. 19759). BOEM may not impose a potentially

interminable records retention requirement, and must specify a records retention period so the regulated community knows what is required. Accordingly, BOEM must establish a reasonable records retention period before finalizing the regulation. As documented in Appendix A we request that this period be reduced to five years or the life of the plan, whichever is shorter.

11.6 The provisions of § 550.187 should be revised to require emissions reporting only for criteria pollutants.

The preamble discussion indicates that BOEM does not intend to include GHGs or HAPs under the scope of the proposed rule. (81 Fed. Reg. 19751). However, by including GHGs and HAPs in the definition of “air pollutant,” GHGs and HAPs would be subject to the proposed rule, even though they are unrelated to the attainment or maintenance of the onshore NAAQS, and therefore beyond the purview of OCSLA section 5(a)(8). As discussed in Section 1.2.3 of this document, BOEM must revise the emissions reporting requirements of proposed § 550.187 to only apply to criteria pollutants that BOEM is authorized to regulate.

12 Plan Emissions Data Requirements

12.1 Proposed emission source data requirements for plans are overly burdensome, unnecessary, and in many cases impossible to provide.

Section 550.205 identifies the air emissions information that must be submitted with EPs, DPPs, and DOCDs, or application for a RUE, pipeline ROW, or lease term pipeline. This section requests detailed information for the wide range of activities associated with exploration, development and production, including construction and decommissioning, for the duration of the plan. The rule would require such detail as (for example) the serial numbers and revolutions per minute (rpm) of engines of support vessels. In many cases, this level of detail is virtually impossible to provide and is not useful for the purpose of assessing onshore NAAQS compliance.

The proposed rule requires that all emissions sources be included when estimating projected emissions. As written, this could conceivably include sources considered insignificant in other regulatory permitting programs, such as welding and painting maintenance activities, rescue boats, small storage tanks, or fugitive emissions (flanges, valves, etc.) on support vessels or MODU. There is no reasonable rationale for requiring the collection of this level of detail for small sources on the OCS, and the burden of collection of this information in terms of cost and time would far outweigh any nominal benefit of collecting it. See Section 11.4 for additional discussion.

Section 550.205 requires plans to include “the following criteria air pollutant and major precursor air pollutant emissions information:

(a) Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan...

(1) For each emissions source, you must identify, to the extent practicable:

(i) Equipment type and number, manufacturer, make and model, location, purpose (i.e., the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics;

(ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and

(iii) The frequency and duration of the proposed use.

(2) For every engine on each facility, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest maximum rated

capacity for the type of engine which you will use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.

(3) For engines on MSCs, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available, indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.

This is an extraordinary information demand, and requires information that is impossible to predict at the time of application, especially for MSC (see Section 3.2). Furthermore, plans will have to be constantly updated to account for changes in the lessee's equipment and fleet (which occur frequently).

Even ignoring MSC and considering only emission units on drilling units and platforms, the level of detail requested is unnecessary. If BOEM finalizes this proposed requirement, the agency will be overwhelmed with engine data of minimal practical utility. Given the minimal impact of offshore sources to onshore air quality, as discussed in sections 1.1 and 2.3, quantifying emissions to such detail does nothing to enhance assurance that offshore sources are not threatening compliance with NAAQS onshore.

As discussed in Section 1.7, if an operator or lessee were to submit a plan in full compliance with the proposed rule, it would be impossible for BOEM to review the voluminous amount of information required under the proposed rule within the required statutory timeframes. Consequently, BOEM should only promulgate those regulations that are absolutely necessary to address the purported problem of onshore air quality and avoid imposing excessive, expensive, and time-consuming administrative burdens on lessees and the agencies that do nothing to further Congressional goals.

12.2 Plans should focus only on large emissions units.

The level of detail required in the proposed rule for emissions sources described in plans is unmanageable and of great concern. It is appropriate to include large sources of emissions (e.g. large stationary engines) that account for the vast majority of OCS air emissions. However, it is not practicable to include small, *de minimis* sources or activities that do not make significant contributions to overall facility emissions.

As recommended in Section 11.4, BOEM should develop a list of "insignificant activities" that would be exempt from the plan and AQRP requirements of subparts B and C. We propose, in Appendix A § 550.105, a definition and list of insignificant activities. The proposed list includes

equipment and activities that do not significantly contribute to emissions at an OCS facility, much less create an adverse impact onshore. Excluding insignificant activities from rule requirements will ease the planning and reporting burden and maintain the focus on larger emissions sources.

12.3 The proposed hierarchy for estimating emissions is overly prescriptive and unwarranted.

Section 550.205(b) of the proposed rule prescribes a hierarchy of acceptable methods for determining the emission factors for a given emission unit for use in a plan. The proposed hierarchy will require a significant amount of work to evaluate and select a method for each pollutant and each emissions source. This will exponentially increase the amount of time required to prepare emissions inventories, and yet, BOEM has not demonstrated that the current method for determining emissions is ineffective.

Under the proposed rule, if no other methods are applicable, then the lessee or operator must conduct emissions testing on the emissions source to determine the appropriate emissions factor. The other methods include use of: vendor-guaranteed or manufacturer-provided emissions or emission factors; emissions factors generated from source tests required by EPA OCS permits as BOEM emission estimates for a specific rig; a model or table, as appropriate, developed by EPA or Federal Aviation Administration (such as for marine engines, non-road engines, tanks, etc.); emissions factors from a published study conducted by a reputable source (such as California Air Resources Board); MARPOL Annex VI standards; and emissions factors from the Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Emissions Sources.

However, the proposed methodology does not account for the fact that some emission calculations do not lend themselves to a “published” emission factor. The emission factor can be derived for the site specific source. This would include glycol dehydrators, crude oil/condensate storage tanks, and amine gas sweetening units.

Further, regulatory standards to which engines are designed and certified are established for pollutant-specific emissions criteria. Other non-engine emissions source factors are also typically pollutant specific. BOEM should clarify that emission factor evaluations will be conducted on a per pollutant basis, such that an operator may use engine certifications or emissions testing to determine emissions factors for an applicable pollutant and other types of emission factor methods for other pollutants (i.e., AQR default factors).

In reviewing various state and federal agency permitting programs, the process by which an emission factor is selected is at the discretion of the owner/operator of the facility. Onshore facilities are typically not restricted to a hierarchy priority of emission estimation methodologies. In light of all the possible emission estimation methodologies, and to account for advancements in such methodologies, BOEM should leave selection of the methodology to the OCS operators. BOEM will have the opportunity to review and comment on the acceptability of the emissions factors as part of the plan approval process. Also, by including such a detailed list of emission estimation methodologies as part of the rule text, BOEM is limiting their ability to make changes to the list without triggering the rulemaking process.

12.4 The air quality emissions reporting spreadsheets are incomplete.

Section 550.205 of the proposed rule identifies what air emissions information must be submitted with offshore plans, including the acceptable methods for determining the appropriate emissions factors to be used and how to report facility emissions, attributed emissions and projected emissions for offshore plans. In conjunction with the proposed rule, BOEM released draft revised air emissions calculations workbooks that will be used to estimate air emissions for EPs (EP_AQ.xls) and DOCDs (DOCD_AQ.xls) in order to meet the requirements of § 550.205.

The following list outlines discrepancies noted between the proposed rule and the AQR workbooks, and includes recommendations to correct and streamline the IC burden costs for offshore operators. In offering suggested improvements, we are not conceding that we agree with the proposed rule requirements nor that the information addressed is necessary for BOEM to perform its functions or useful in determining whether OCS activities significantly affect the air quality of a state. Furthermore, as discussed in Section 2.7, a minimum of 180 days was needed to conduct a thorough review of the proposed rule and supporting information. The list below reflects as complete a review of the spreadsheets as time allowed.

- The workbooks as released for review and comment use EPA AP-42 references as the primary source of emission factors and only reference industry studies or BOEM's 2005/2011 Gulfwide emissions inventory if no AP-42 factor is available. In contrast, the proposed rule lists emission factor references in a prioritized order, stating that a method may only be used if all other higher priority methods are not available. According to § 550.205(b), AP-42 factors should only be used when factors that are based on source test results or that are vendor-guaranteed or provided by the manufacturer are not available.
- The draft workbooks do not report estimated emissions for each of the emissions categories required under the proposed rule. For example, the SUMMARY page only presents a single maximum 12-month rolling total emissions value for each pollutant, which would represent the "projected emissions" for that pollutant. However, per § 550.205(c)(2), the maximum 12-month rolling sum of emissions needs to be calculated from each facility and from each individual emissions source on or physically connected to each facility. The proposed rule also requires that the lessee report maximum rolling-12 month "attributed emissions" (during the same 12-month period as the facility maximum), which are not calculated by the workbooks.
- Similar to the 12-month sum of emissions discussed above, § 550.205(c)(3), (d), and (e) require the estimation of the maximum projected peak hourly emissions. The draft workbooks calculate hourly emissions for individual sources based on estimated annual emissions. Therefore, those hourly emissions essentially represent average hourly emissions and not maximum projected peak hourly emissions as required by the rule. Furthermore, the draft workbooks overestimate the total hourly emissions for each operating year (each EMISSIONS sheet), because they assume all sources will be operating at the same time rather than accounting for the temporal distribution of source operations. For example, if a support vessel operates from 1/1/16-5/31/16 with 40.8 lb/hr of PM10 emissions and another source operates from 6/1/16-12/31/16 with 40.8 lb/hr of PM10 emissions, the workbooks sum these values together yielding a maximum value of 81.6 lb/hr of PM10 emissions instead of estimating 40.8 lb/hr of PM10. Similarly, a facility may have multiple power generating turbines with one turbine off-line acting as a spare. The AQR spreadsheet would currently estimate emissions as if all turbines were

operating. BOEM should update the workbooks to calculate all of the emissions categories or revise the regulation to clarify that only the emissions categories calculated by the workbooks are necessary. BOEM should also ensure that the AQR workbooks do not overestimate maximum hourly emissions.

- The ability to allocate “attributed emissions” to multiple facilities is not currently functional in the AQR spreadsheet as described under § 550.205(d)(5). It is evident that the inclusion of this functionality was started but not completed.
- The draft workbooks currently do not account for all activities regulated under the proposed new regulations. Specifically, the workbooks do not account for decommissioning activities.
- The draft workbooks currently do not account for including aircraft and onshore facility when predicted concentrations attributable to offshore sources are within 95 percent of a SIL.
- It is unclear how the workbooks could be modified to account for consolidation of multiple facilities, especially in regard to calculating maximum rolling 12-month values of complex total emissions.
- Based on a review of the workbook instructions, BOEM must revise the instructions to more clearly follow the regulatory requirements and include additional instructions for proper use of the workbook. This would minimize the burden on the offshore operators as well as BOEM staff when reviewing completed workbooks. The revisions should be completed prior to publication of the final rule and include an opportunity for additional comment.
- Section 550.205(a) of the proposed regulation requires a substantial amount of information for emission sources that could be captured in the AQR spreadsheets. It would reduce the IC burden on offshore operators if the AQR spreadsheets were revised to include all relevant data requested by § 550.205(a)(1-5) rather than having to provide some of the data in the spreadsheet and the remaining data in separate tables as part of a plan submittal.
- The draft AQR spreadsheets as released for comment have no mechanisms to include ERMs (operational controls, equipment replacement, BACT, or emission credits) that will be employed or acquired as part of a proposed OCS operation. Updating the AQR spreadsheets to standardize and account for ERMs would reduce the IC burden on offshore operators as well as minimize BOEM review time.
- The proposed rule includes a new requirement for ROW, RUE and lease-term pipeline applications to include air emissions data with the application. However, BOEM has not provided a draft air emissions calculations workbook or similar tool for submitting this information.

Notwithstanding the comments above, we request that BOEM update the draft AQR workbooks in order to align with the proposed redline/strikeout rule requirements provided in Appendix A. BOEM must update the workbooks and allow for additional comment prior to publication of the final rule.

12.5 BOEM cannot regulate emissions from aircraft and onshore facilities, which are outside the scope of BOEM's jurisdiction.

As discussed in more detail in Section 1.2, BOEM's proposed rule impermissibly "attributes" non-OCSLA authorized activity (i.e., MSC) emissions to the emissions of a facility, presumably regulating the emissions of platforms and drillships to offset the emissions of "associated" activities. BOEM's regulatory authority under section 5(a)(8) of OCSLA is limited to activities that it "authorizes," which includes "artificial islands and installations...permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources therefrom." 43 U.S.C. § 1333(a). BOEM has no authority to authorize aircraft or onshore facilities, which are clearly not attached to the seabed for the purpose of exploring for, developing or producing oil or gas. BOEM therefore has no authority to regulate their emissions or any other aspect of their operation. Because aircraft and onshore facilities are not "activities authorized" under OCSLA for the purposes of section 5(a)(8), they and their emissions are beyond the purview of any rule BOEM might promulgate.

12.5.1 We support BOEM's determination that collection of emissions data from aircraft and onshore facilities is unnecessary.

BOEM's proposal to not require the collection of emissions data from aircraft and onshore facilities is appropriate, because, as stated in the preamble (81 Fed. Reg. 19737):

collecting information on emissions from aircraft that support OCS operations in all plans would be unduly burdensome since aircraft emissions are a small fraction of emissions in most plans and their inclusion would likely not cause a facility's projected emissions to exceed the EETs or any AAQSB in a State where it would otherwise not do so. Available data from plans submitted to BOEM and its predecessors indicate that the level of relevant emissions from aircraft is generally an extremely small percentage of the total emissions reported in each plan. Furthermore, there are a large number of aircraft supporting OCS facilities and these aircraft service more facilities and are used for a wider variety of purposes than MSC, including for purposes other than supporting oil and gas facilities on the OCS. This makes it cumbersome to accurately quantify and attribute (with respect to OCS support functions) their emissions to individual facilities in a plan in many cases.

Furthermore,

Emissions from large sources onshore are in many cases already identified and regulated by the EPA, or by the States in the context of their respective SIPs. In addition, under the CAA the EPA has established standards for several types of mobile sources, no matter where they are operated through requirements that engines, vehicles, and equipment be certified to exhaust emission limits, and through the regulation of certain characteristics of the fuels used in these engines. (81 Fed. Reg. 19738).

Based on the reasons provided, and because aircraft and onshore facilities are not "activities authorized" under OCSLA for the purposes of Section 5(a)(8), we support BOEM's proposal not to require the collection of emissions data for these sources.

12.5.2 Air dispersion modeling of emissions from aircraft and onshore sources is unwarranted.

Under proposed § 550.205(m), applicants would be required to provide emissions information and model emissions from aircraft and onshore facilities when predicted concentrations attributable to offshore sources are within 95 percent of a SIL. BOEM has not provided a scientific reasoning for the seemingly arbitrary 95 percent threshold nor has it reconciled the valid reasons listed in Section 12.5.1 for not including these sources. Further, BOEM proposes that operators combine modeled concentrations from aircraft and onshore facilities with the impacts of the projected emissions, without consideration that the impacts from aircraft and onshore facilities are negligible and rarely coincide in time or location with impacts from OCS facilities. For this reason, these data are not useful for assessing onshore NAAQS compliance. There is no environmental benefit associated with requiring detailed information about aircraft even if OCS source contributions to onshore concentrations are within BOEM's arbitrary threshold of 95 percent of a SIL.

12.6 It is unreasonable to regulate air emissions from right-of-use and easement and right-of-way activities.

The proposed rule includes a new requirement for ROW, RUE and lease-term pipeline applications to include air emissions data with the application. RUE and ROW applications do not require inclusion of air emissions data under the current regulations,³⁸ and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Nor have RUE and ROW emissions been identified as significant sources in any affected state SIPs. Consequently, it is unreasonable to regulate emissions from these activities.

Furthermore, collecting emissions resulting from installing and operating pipeline that support OCS operations would be unduly burdensome because available data indicate that the level of relevant emissions from pipeline installation and operation is generally an extremely small percentage of the EETs. A review of typical offshore ROW operations indicates that maximum projected emissions from installing a pipeline and operating a junction platform associated with a ROW are on the order of 0-10 percent of the EETs. Similar to BOEM's position on aircraft emissions, because the emissions from activities associated with ROW applications are de minimis, the collection of emissions data from these activities is unwarranted.

12.7 BOEM cannot regulate emissions of black carbon, hazardous air pollutants, hydrogen sulphide, and greenhouse gases.

As discussed in Section 1.2.3, § 550.105 of the proposed rule provides new definitions. The definition of "Air Pollutant" has been expanded beyond criteria pollutants to include precursor pollutants, HAP, and GHG. Inclusion of HAP and GHG increases the number of pollutants BOEM may collect information on from seven to approximately 200.

³⁸ BOEM issued NTL 2015-N06 pertaining to RUE (new installations) which clarified that in order for BOEM to grant the RUE request for installations, the proposed activities by OCS lessees are also subject to the Plans approval process and the regulation requirements set forth in 30 CFR Part 550, subpart B.

The preamble discussion indicates that BOEM does not intend to include GHGs or HAPs under the purview of the proposed rule. (81 Fed. Reg. 19751). However, by including GHGs and HAPs in the definition of “air pollutant,” GHGs and HAPs would be subject to the proposed rule, even though they are unrelated to the attainment or maintenance of the onshore NAAQS, and therefore beyond the purview of OCSLA section 5(a)(8).

Although HAPs and GHGs are not a component of the modelling analyses and are not at this time subject to ERM, the proposed rule imposes a number of requirements to HAPs and GHGs as if they were criteria pollutants:

- Proposed § 550.187 would codify and make mandatory the existing GOMR mechanism for reporting ongoing emissions under the GOADS, as provided for in BOEM NTL No. 2014-G01. NTL No. 2014-G01 currently requires operators to collect and report activity information including facility, equipment, and fuel usage. BOEM uses that information to calculate emissions data for NAAQS criteria pollutants. BOEM also calculates emissions data for GHG to assist operators with their mandatory reporting of greenhouse gases to the EPA. However, proposed § 550.187(a) would expand the requirements to require operators to “collect and maintain information regarding all air pollutant emissions from all emissions sources associated with your operations” which would include collection of GHG and HAP information.
- Under proposed § 550.303, BOEM would establish “the rate of projected emissions, calculated for each air pollutant, above which facilities would be subject to the requirement to perform modelling,” and require lessees and operators to calculate, report, and compare projected emissions of pollutants for the purpose of determining whether modelling is required. Proposed § 550.303(d) would require lessees and operators to account for, consolidate, and model all “air pollutant emissions” from multiple facilities. As the definition of “air pollutant” is currently drafted, these requirements would apply to GHG and HAP emissions even though these emissions are unrelated to the attainment and maintenance of the NAAQS.

BOEM requires applicants to identify SO₂ emissions attributable to H₂S flaring but also requires identification of H₂S emissions if they exceed the Significant Emission Rates (SER) established in EPA’s PSD program. While there is a need to account for SO₂ emissions due to flaring of H₂S, there is no basis under OCSLA to require reporting of H₂S emissions because there is no NAAQS for H₂S.

Because OCSLA does not authorize BOEM to promulgate emission regulations for any purpose other than to the extent that such emissions have a significant impact on onshore air quality, BOEM must remove HAPs and GHGs from the definition of “air pollutant” and from the requirements of the proposed rule.

For similar reasons, BOEM’s consideration of future regulation of black carbon in the preamble is precluded by its lack of OCSLA authority to do so. EPA has not promulgated any air quality standards for black carbon. To the extent black carbon is regulated under the CAA, it is regulated as a component of PM_{2.5}.

13 Other Comments

13.1 BOEM should clarify the terminology for responsible entity.

The proposed rule uses the phrase "lessee, operator and owner" in several places. However, the "designated operator" is the entity responsible for developing, submitting and seeking approval of plans. It is our understanding that it is not BOEM's intent to change the compliance responsibility of the designated operator, who is ultimately responsible for plan submittal and compliance. Consequently, BOEM must clarify the rule text to refer to "designated operator" when referring to the entity responsible for plan submittal and compliance.

13.2 OCSLA does not provide BOEM with authority to incorporate documents and establish them as regulatory requirements.

In proposed § 550.198, BOEM proposes to incorporate by reference certain documents and make them "regulatory requirements." However, BOEM only has the authority to regulate emissions from activities it authorizes to the extent those activities have a significant effect on state air quality and that cause or contribute to a violation of the NAAQS. The documents proposed for incorporation by reference under proposed § 550.198 are not related to this purpose. Instead, they are guidance documents that do not contain mandatory requirements, (e.g. EPA AP-42), or are mandatory standards that are unrelated to BOEM's OCSLA authority (e.g. MARPOL Annex VI, which is applicable to vessel operators, not OCS lessees/operators). BOEM may not make guidance documents mandatory or otherwise hijack regulatory processes that are outside of its jurisdiction to somehow enforce compliance on OCS lessees and operators.

In addition, it is unclear how an operator would comply with non-mandatory guidance documents such as EPA AP-42 or the MOVES Users Guide, which are not worded in mandatory terms and compliance with which is uncertain. It is also unclear how operators are to comply with mandatory regulatory requirements that are not intended for lessees and operators. Therefore, BOEM must remove § 550.198(a)-(d) in its entirety.

APPENDIX A: REQUESTED CHANGES TO PROPOSED RULE

Appendix A - Requested Changes to Proposed Rule

Throughout our comments, we have objected to many of these proposed rule provisions as beyond the scope of BOEM's authority and contrary to law, as well as being impracticable and unworkable. If BOEM nevertheless proceeds with these rule provisions, the agency should, at a minimum, limit certain specified rule provisions according to our suggestions for revised language below.

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
Definitions	550.105	<p><i>Air pollutant</i> means any of the following:</p> <p>(1) Any criteria pollutant for which the U.S. Environmental Protection Agency (USEPA) has established primary or secondary National Ambient Air Quality Standards (NAAQS), in 40 CFR part 50, pursuant to section 109 of the Clean Air Act (CAA);</p> <p>(2) Any precursor air pollutant identified by the USEPA that contributes to the formation of a criteria pollutant through a photochemical or other reaction, including, but not limited to, Volatile Organic Compounds (VOCs), ammonia (NH₃), and those criteria pollutants (CPs) that are also precursors for other CPs (such as sulphur dioxide (SO₂));</p> <p>3) any USEPA-defined Greenhouse Gas (GHG), as defined at 40 CFR 98.6, pursuant to section 111 of the CAA; and</p> <p>(4) Any USEPA-defined Hazardous Air Pollutant, as defined at 40 CFR 63.2, pursuant to section 112 of the CAA</p>	<p>As explained in Section 1.2.3 of our comments, BOEM's mandate under OCSLA is to ensure that OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. NAAQS are based on levels of criteria pollutants and precursor air pollutants. Therefore, it is not appropriate to include hazardous air pollutants and greenhouse gases in the definition of "air pollutant" as these are not covered by the NAAQS. See Section 12.7 of our comments for additional discussions on this issue.</p> <p>Additionally, BOEM states at 81 Fed. Reg. at 19,748 the "definitions related to air quality terms are currently located in three places in § 550: §§ 550.105, 550.200, and 550.302." However, several definitions of air quality terms (air pollutant, attainment area, BACT, emission offsets, existing facility, minerals, non-attainment area, projected emissions) are also contained in §250.105. If BOEM were to proceed with modifying or removing the 30 CFR 550.105 & 550.302 definitions, it would introduce regulatory disconnect between the use of the terms under BOEM's & BSEE's regulation. Such a disconnect creates unnecessary regulatory complexity. It is our request that BSEE revise or delete those definitions from § 250.105 under a separate rulemaking.</p> <p>Finally, consistent with the Environmental Protection Agency's (EPA) regulatory requirements contained in 40 CFR 51.165(a)(1)(xxvii) it is requested that BOEM clarify that VOC and NH₃ are presumed not to be precursors to PM_{2.5}, unless a State demonstrates to the Administrator's satisfaction or EPA demonstrates that emission of VOC or NH₃ from OCS sources are a significant contributor to an area's ambient PM_{2.5} concentrations. As such, we request that the USEPA citation for precursor air pollutant identified by the at 40 CFR 51.166(b)(49)(i) which address this issue be included in the definition of air pollutant.</p>	<p><i>Air pollutant</i> means any of the following:</p> <p>(1) Any criteria pollutant for which the U.S. Environmental Protection Agency (USEPA) has established primary or secondary National Ambient Air Quality Standards (NAAQS), in 40 CFR part 50, pursuant to section 109 of the Clean Air Act (CAA);</p> <p>(2) Any precursor air pollutant identified by the USEPA at 40 CFR 51.166(b)(49)(i) that contributes to the formation of a criteria pollutant through a photochemical or other reaction, including, but not limited to, Volatile Organic Compounds (VOCs), ammonia (NH₃), and those criteria pollutants (CPs) that are also precursors for other CPs (such as sulphur dioxide (SO₂));</p> <p>3) VOCs and NH₃ are presumed not to be precursors to PM_{2.5}, unless a State demonstrates to the EPA Administrator's satisfaction or EPA demonstrates that emissions of VOCs or NH₃ from OCS sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations; any USEPA-defined Greenhouse Gas (GHG), as defined at 40 CFR 98.6, pursuant to section 111 of the CAA; and</p> <p>(4) Any USEPA-defined Hazardous Air Pollutant, as defined at 40 CFR 63.2, pursuant to section 112 of the CAA</p>
	550.105	<p><i>Emissions source</i> means a device or substance that emits air pollutant(s) in connection with any authorized activity described in your plan. Several emissions sources may exist on a single facility, aircraft, vessel, or vehicle. Anything that produces or results in the release of one or more air pollutant(s), including the flashing, flaring or venting of natural gas, involves burning any oil or well test fluids, or generates fugitive emissions, is an emissions source. Examples include, but are not limited to: boilers/heaters/burners, diesel engines, drilling rigs, combustion flares, cold vents, glycol dehydrators, natural gas engines, natural gas turbines, pneumatic pumps, pressure-level controllers, amine units, tanks, dual fuel turbines, sources involved in mud degassing, storage tanks, well testing equipment, vessels (including support vessels, pipeline lay barges, pipeline bury barges, derrick barges), and any other equipment that could cause fugitive emissions, venting, losses from flashing, or loading losses.</p>	<p>The proposed definition of emissions source attempts to list any and all types of equipment and activities that may result in emissions to the atmosphere. This creates a definition that is overly prescriptive and complex. Attempting to list all potential equipment and processes that generate regulated air emissions is not needed to fully define applicable emission sources.</p> <p>It is suggested to simplify the definition as shown to the right. The proposed alternate definition would be inclusive of emission sources listed in the draft definition. However, it is important that text is added (in red) to clarify that an emissions source releases pollutants to the atmosphere and does not include equipment where emissions are recovered and utilized in a beneficial manner as well as limiting the term pollutant to criteria and precursor pollutants. As discussed at length in our comments, BOEM's mandate under OCSLA is to ensure that OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. NAAQS are only based on levels of criteria pollutants and precursor air pollutants.</p> <p>BOEM proposes that all emissions sources be included when estimating projected emissions. This could conceivably include insignificant sources, such as welding and painting maintenance activities, rescue boats, small storage tanks, or fugitive emissions (flanges, valves, etc.) on support vessels or mobile offshore drilling units (MODU). There is no reasonable rationale for requiring the collection of this level of detail for small sources on the OCS, and the burden of collection of this information in terms of cost and time would far outweigh any nominal benefit of collecting it. As such, we are proposing to introduce the concept of creating an "insignificant activities" definition, similar to what most states have included in their air quality rules. Hence, a statement has been added to the definition of emissions source to clarify that insignificant activities are not considered emissions sources.</p> <p>Most state environmental regulatory agencies that have authority from the USEPA to implement and enforce the Part 70 Title V Federal Operating Permit Program and the New Source Review program under the Clean Air Act include "Insignificant Activities" lists in the air permitting rules. A few examples of State agencies that include Insignificant Activities include Louisiana Department of Environmental Quality, Mississippi Department of Environmental Quality, Alabama Department of Environmental Management and the Texas Commission on Environmental Quality. Furthermore, the USEPA under its Clean Air Act Title V Operating permits program</p>	<p><i>Emissions source</i> means a device or substance that emits criteria or precursor air pollutant(s) to the atmosphere in connection with any authorized activity described in your plan. Several emissions sources may exist on a single facility-aircraft, or vessel, or vehicle. Anything that produces air results in the release of one or more air pollutant(s)-including the flashing, flaring or venting of natural gas, involves burning any oil or well test fluids, or generates fugitive emissions-is an emissions source. Examples include, but are not limited to: boilers/heaters/burners, diesel engines, drilling rigs, combustion flares, cold vents, glycol dehydrators, natural gas engines, natural gas turbines, pneumatic pumps, pressure-level controllers, amine units, tanks, dual fuel turbines, sources involved in mud degassing, storage tanks, well testing equipment, vessels (including support vessels, pipeline lay barges, pipeline bury barges, derrick barges), and any other equipment that could cause fugitive emissions, venting, losses from flashing, or loading losses-Equipment and activities listed as "insignificant activities" are not considered emissions sources for purposes of subparts A, B, C.</p>

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language														
			allows the use of "Insignificant Activities" to exempt certain emission sources. Under 40 CFR 70.5(c), the EPA may approve as part of a State program a list of insignificant activities and emissions levels which need not be included in permit applications.															
	550.105	<i>Federal Land Manager (FLM)</i> means the Secretary of the Department with authority over any federal Class I area or sensitive Class II area (or the Secretary's designee).	As discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. Therefore, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed.	<i>Federal Land Manager (FLM)</i> means the Secretary of the Department with authority over any federal Class I area or sensitive Class II area (or the Secretary's designee).														
	550.105	<i>Flaring</i> means the burning of natural gas or other hydrocarbons and the release of the associated emissions into the atmosphere. The term "flaring" is equivalent to combustion flaring (i.e., burning of the gases), but is distinct from cold venting, which involves the discharge of raw pollutants into the air without burning.	The proposed definition contains language that is unnecessary. Furthermore, we request that the current definitions of flaring in § 250.105 be updated to be consistent with the final definition promulgated under § 550.105. If BOEM were to proceed with changing the 30 CFR 550.105 definition of flaring but not change the definition in § 250.105, it would introduce regulatory disconnect between the uses of the term under BSEE's regulation. Such a disconnect creates unnecessary regulatory complexity. Finally, we are proposing to further simplify the definition by replacing the terms "natural gas or other hydrocarbons" with the general term "gas". This change is more inclusive and will eliminate unneeded text.	<i>Flaring</i> means the burning of natural gas or other hydrocarbons and the release of the associated emissions; it is released into the atmosphere. The term "flaring" is equivalent to combustion flaring (i.e., burning of the gases), but is distinct from cold venting, which involves the discharge of raw pollutants into the air without burning.														
	550.105	Proposed new definition.	<p>The level of detail required for emissions sources described in plans is a significant concern in this proposed rule. It is appropriate to include substantial sources of emissions (e.g. large stationary engines) that account for the majority of OCS air emissions. However, as discussed in Section 12.2 of our comments it is not practicable to include small, insignificant sources that do not make significant contributions to overall facility emissions. Due to the lack of environmental benefit compared to the significant effort required to collect information about insignificant sources we request that insignificant activity emission sources not be required for inclusion in plan submittals or associated emission inventories.</p> <p>The proposed definition and list of insignificant activities (see right) include equipment and activities that do not significantly contribute to emissions at an OCS facility, much less create an adverse impact onshore. It is strongly requested that BOEM consider inclusion of this list of insignificant activities to ease the planning and reporting burden associated with the proposed rule, as well as ensure that the proper focus is applied to comparatively larger emissions sources.</p>	<p>Proposed New Definition</p> <p><i>Insignificant Activities</i> means activities with emissions levels which have been determined to be at levels that need not be further assessed for the purposes of this part. Emissions sources identified below as "insignificant activities" are exempt from all air quality requirements in 30 CFR 550:</p> <table border="1"> <thead> <tr> <th>Insignificant Activities List</th> </tr> </thead> <tbody> <tr> <td>1. external combustion equipment with a design rate less than or equal to 10 million btu per hour;</td> </tr> <tr> <td>2. storage tanks, except those storing crude oil and condensate;</td> </tr> <tr> <td>3. any engine with a maximum horsepower rating less than or equal to 100 hp;</td> </tr> <tr> <td>4. emissions from laboratory equipment/vents used exclusively for routine chemical or physical analysis for quality control or environmental monitoring purposes;</td> </tr> <tr> <td>5. noncommercial water washing operations of empty drums less than or equal to 55 gallons;</td> </tr> <tr> <td>6. portable fuel tanks used on a temporary basis in maintenance and construction activities;</td> </tr> <tr> <td>7. emissions from process stream or process vent analyzers;</td> </tr> <tr> <td>8. storage tanks containing soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, molasses, corn syrup, aqueous salt solutions, or aqueous caustic solutions;</td> </tr> <tr> <td>9. catalyst charging operations;</td> </tr> <tr> <td>10. mud degassing operations;</td> </tr> <tr> <td>11. activities which occur strictly for maintenance of buildings, grinding, cutting, welding, woodworking, general repairs, janitorial activities, steam cleaning, and water washing activities;</td> </tr> <tr> <td>12. surface-coating of equipment during miscellaneous maintenance and construction activities, including spray painting, roll-coating and painting with aerosol spray cans.</td> </tr> <tr> <td>13. miscellaneous equipment maintenance or construction, which may include, but is not limited to, such activities as: welding, steam cleaning, equipment used for hydraulic or hydrostatic testing, miscellaneous solvent use, miscellaneous sandblasting, sweeping, insulation removal, acid washing, caustic washing, water blasting, application of refractory and insulation, brazing, soldering, the use of adhesives, grinding, and cutting.</td> </tr> </tbody> </table>	Insignificant Activities List	1. external combustion equipment with a design rate less than or equal to 10 million btu per hour;	2. storage tanks, except those storing crude oil and condensate;	3. any engine with a maximum horsepower rating less than or equal to 100 hp;	4. emissions from laboratory equipment/vents used exclusively for routine chemical or physical analysis for quality control or environmental monitoring purposes;	5. noncommercial water washing operations of empty drums less than or equal to 55 gallons;	6. portable fuel tanks used on a temporary basis in maintenance and construction activities;	7. emissions from process stream or process vent analyzers;	8. storage tanks containing soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, molasses, corn syrup, aqueous salt solutions, or aqueous caustic solutions;	9. catalyst charging operations;	10. mud degassing operations;	11. activities which occur strictly for maintenance of buildings, grinding, cutting, welding, woodworking, general repairs, janitorial activities, steam cleaning, and water washing activities;	12. surface-coating of equipment during miscellaneous maintenance and construction activities, including spray painting, roll-coating and painting with aerosol spray cans.	13. miscellaneous equipment maintenance or construction, which may include, but is not limited to, such activities as: welding, steam cleaning, equipment used for hydraulic or hydrostatic testing, miscellaneous solvent use, miscellaneous sandblasting, sweeping, insulation removal, acid washing, caustic washing, water blasting, application of refractory and insulation, brazing, soldering, the use of adhesives, grinding, and cutting.
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				<p>14. refueling emissions from forklifts, cranes, carts, maintenance trucks, helicopters, marine vessels, and other similar sources;</p> <p>15. office activities such as photocopying, blueprint copying, and photographic processes;</p> <p>16. emissions from pipeline pigging and repair operations;</p> <p>17. fugitive dust emissions from mud, cement, or dry chemical transfers, storage and use;</p> <p>18. emissions from storage or use of water-treating chemicals;</p> <p>19. miscellaneous additions or upgrades of instrumentation or control systems;</p> <p>20. emissions from food preparation in kitchens, cafeterias, and facilities where food is consumed on-site;</p> <p>21. emissions from air contaminant detectors, air contaminant recorders, combustion controllers, or combustion shutoff devices;</p> <p>22. buildings, cabinets, and facilities used for storage of chemicals in closed containers;</p> <p>23. use of products for the purpose of maintaining air conditioning or refrigeration units;</p> <p>24. stacks or vents to prevent escape of sanitary sewer gases through plumbing traps and marine sanitation devices;</p> <p>25. emissions from equipment lubricating systems (i.e., oil mist);</p> <p>26. potable water treatment systems and sewage treatment systems;</p> <p>27. instrument air systems, excluding fuel-fired compressors;</p> <p>28. air vents from air compressors;</p> <p>29. periodic use of air for cleanup;</p> <p>30. solid waste dumpsters;</p> <p>31. emissions from pneumatic starters on reciprocating engines, turbines, or other equipment, pneumatic pumps, and pneumatic pressure level controllers;</p> <p>32. emissions from engine crankcase vents;</p> <p>33. generators, boilers, or other fuel burning equipment that is of equal or smaller capacity than the primary operating unit, that cannot be used in conjunction with the primary operating unit (except for short durations when shutting down the primary operating unit (maximum of 24 hours) and when starting up the primary operating unit until it reaches steady-state operation (maximum of 72 hours)), and that does not increase emissions of any criteria or precursor air pollutant;</p> <p>34. lifeboats and fast rescue boats;</p> <p>35. emissions from firefighting training or testing;</p> <p>36. produced water treatment units (e.g., Wemco units) on crude oil and natural gas production platforms;</p> <p>37. emergency electrical power generators used only during power outages or periodic testing;</p> <p>38. emissions associated with an oil spill or emergency response action, exercise or drill;</p> <p>39. emissions associated with laundry operations, including but not limited to the operation of washers, extractors, dryers;</p>

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				<table border="1"> <tr> <td>40. Emissions associated normal use of consumer-type cleaning or disinfecting products or medical products such as furniture polish, spray disinfectants, cleansers, hand sanitizers, asthma inhalers, etc.;</td> </tr> <tr> <td>41. refuse incinerators;</td> </tr> <tr> <td>42. temporary sources that operate less than 60 days;</td> </tr> <tr> <td>43. other similar sources that the Regional Supervisor determines are insignificant activities;</td> </tr> <tr> <td>44. Emission units that emit no more than 5 tpy of any criteria or precursor air pollutant.</td> </tr> </table>	40. Emissions associated normal use of consumer-type cleaning or disinfecting products or medical products such as furniture polish, spray disinfectants, cleansers, hand sanitizers, asthma inhalers, etc.;	41. refuse incinerators;	42. temporary sources that operate less than 60 days;	43. other similar sources that the Regional Supervisor determines are insignificant activities;	44. Emission units that emit no more than 5 tpy of any criteria or precursor air pollutant.
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	550.105	<i>Minerals</i> includes oil, gas, sulphur, geopressured-geothermal and associated resources, and all other minerals that are authorized by an Act of Congress to be produced from public lands.	No comments regarding this definition.	N/A					
	550.105	<i>Mobile support craft (MSC)</i> means any offshore supply vessel (OSV) as defined by the USCG in accordance with 46 U.S.C. 2101, and any ship, tanker, tug or tow boat, pipeline barge, anchor handling vessel, facility installation vessel, refueling or ice management vessel, oil-spill response vessel, or any other offshore vessel, remotely operated vehicle (ROV), or any offshore vehicle used by, or in the support of, the offshore operations described in a plan. For the purpose of evaluating air emissions, an MSC is considered a facility while temporarily attached to the seabed or connected to another facility.	More clarity is needed in determining what is meant by "connected to another facility." It is requested that the phrase "by a walkway" be added. This addition will eliminate confusion and inconsistent application when the rule is applied. For example, a supply vessel may be temporarily servicing a facility by supplying potable water or diesel fuel via a transfer hose. This type of operations should not be considered as "connected to another facility." This clarification would not change how air emissions are accounted for under § 550.205(d).	<i>Mobile support craft (MSC)</i> means any offshore supply vessel (OSV) as defined by the USCG in accordance with 46 U.S.C. 2101, and any ship, tanker, tug or tow boat, pipeline barge, anchor handling vessel, facility installation vessel, refueling or ice management vessel, oil-spill response vessel, or any other offshore vessel, remotely operated vehicle (ROV), or any offshore vehicle used by, or in the support of, the offshore operations described in a plan. For the purpose of evaluating air emissions, an MSC is considered a facility or part of facility as specified in the definition of facility in § 550.302(b) in a facility while temporarily attached to the seabed or connected to another facility.					
	550.105	<i>Offshore vehicle</i> means a type of MSC that is capable of being driven on ice and which provides support services or personnel to your facility or facilities.	No comments regarding this definition.	N/A					
	550.105	<i>Right-of-use and easement (RUE)</i> means seabed use authorization, other than an OCS lease, that BOEM may grant at an OCS site pursuant to §§ 550.160 through 550.166 of this part.	To maintain consistency with BSEE definitions found in § 250.105 it is requested to align the definitions of "right of use" and "easement" as two separate terms.	<i>Right-of-use and easement (RUE)</i> means seabed use authorization, other than an OCS lease, that BOEM may grant at an OCS site pursuant to §§ 550.160 through 550.166 of this part. <i>Right-of-use</i> means any authorization issued under 30 CFR Part 550 to use OCS lands. <i>Easement</i> means an authorization for a nonpossessory, nonexclusive interest in a portion of the OCS, whether leased or unleased, which specifies the rights of the holder to use the area embraced in the easement in a manner consistent with the terms and conditions of the granting authority.					
	550.105	<i>State</i> means any State of the United States (U.S.) extending to the limit of the State seaward boundary (SSB), as defined in 43 U.S.C. 1301(b).	No comments regarding this definition.	N/A					
	550.105	<i>Venting</i> means the release of gas into the atmosphere, including through a stack without igniting it, whereby relief flows of natural gas or other hydrocarbons are directed to an unignited flare or which are otherwise discharged directly to the atmosphere. This includes gas that is released underwater and bubbles to the atmosphere.	To maintain consistency with BSEE definitions found in § 250.105 it is requested to adopt the BSEE definition of venting. Note this definition is consistent with the current definition contained in in § 550.105.	<i>Venting</i> means the release of gas into the atmosphere, including through a stack into the atmosphere without igniting it, whereby relief flows of natural gas or other hydrocarbons are directed to an unignited flare or which are otherwise discharged directly to the atmosphere. This includes gas that is released underwater and bubbles to the atmosphere.					
<i>May I use or be required to use alternate procedures or equipment?</i>	550.141(d)	In order to protect public health, you may be required or allowed by the Regional Supervisor to temporarily suspend the use of equipment that emits air pollutants, or to implement operational control(s) on the use of such equipment, when an adjacent State or locality declares an air quality episode or emergency, provided that any such suspension or operational control(s) would not cause an immediate threat to safety or the environment.	In § 550.141(d), the Proposed Rule provides BOEM authority to temporarily suspend the use of equipment that emits air pollutants, or to implement operational control(s) on the use of such equipment, for the purpose of "protecting public health" when an adjacent State or locality declares an "air quality episode or emergency." This provision is inconsistent with the scope of BOEM's authority under Section 5(a)(8) of OCSLA, which only allows BOEM to regulate for "compliance with the [NAAQS]." Accordingly, even if there is an onshore emergency, that emergency must be related to compliance with the NAAQS, and BOEM must demonstrate that the OCS facility at issue is (1) significantly impacting the ambient air quality of that state, and (2) causing or contributing to the NAAQS violation that gives rise to the state-declared "emergency," before it may impose any operational control or limitation on the use of equipment. The probability that such a situation could occur is extremely remote. As BOEM itself acknowledges in the preamble to the rule and in its many environmental analyses, it is unlikely that an adjacent state will experience any significant, much less NAAQS-violative, impact from an OCS facility. Given this, it is extremely unlikely that reducing an OCS facility's emissions would provide any benefit in mitigating the state emergency or relate to onshore compliance with the NAAQS. Accordingly, proposed § 550.141(d) should be removed from the proposal.	In order to protect public health you may be required or allowed by the Regional Supervisor to temporarily suspend the use of equipment that emits criteria or precursor air pollutants, or to implement operational control(s) on the use of such equipment, when an adjacent State or locality declares an air quality episode or emergency, provided that any such suspension or operational control(s) would not cause an immediate threat to safety or the environment, and it can be determined that your OCS source is contributing to the State or local air quality episode or emergency.					

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	550.141(c)	<p>With respect to published documents cited in these regulations, including those incorporated by reference in § 550.198, the following provisions apply:</p> <p>(1) In each instance, the applicable document is the one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. You may comply with a later edition of a specific document incorporated by reference, provided you show that complying with the later edition provides a degree of scientific or technical accuracy, environmental protection, or performance equal to or better than would be achieved by compliance with the listed edition, and you obtain the prior written approval for alternative compliance from the authorized BOEM official.</p> <p>(2) In the case of USEPA documents, you may always use the most recent version approved by the USEPA.</p>	<p>As technical knowledge and scientific evaluation evolves, it is imperative that BOEM's rules incorporate the most recent, state-of-the-art science. As noted in our below comments to § 550.198, there is no need for the documents to be incorporated by reference. If BOEM elects to proceed with the listing of published documents, it is imperative that the language be changed to allow the use of the most recent, state-of-the-art science. Therefore, it is requested that bullet item 1) in this paragraph be changed to say that the most recent version of any supplemental technical document may be used as a standard and the Regional Supervisor may request any sufficiency determinations from the publishing body rather than from the individual operators.</p> <p>If the language is not altered, BOEM may be forced into largely unworkable situations whereby BOEM will be inundated with "alternative compliance" requests from a number of operators each time the incorporated by reference documents undergo the typical processes by which they are updated. Such an administrative burden is not anticipated under the IC burden hours included in the preamble.</p>	<p>With respect to published documents cited in these regulations Subpart B, including those incorporated by reference in § 550.198, the following provisions apply:</p> <p>(1) In each instance, the applicable document is the most recent version approved by the publishing body, one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. You may comply with a later edition of a specific document incorporated by reference, provided you show that complying with the later edition provides a degree of scientific or technical accuracy, environmental protection, or performance equal to or better than would be achieved by compliance with the listed edition, and you obtain the prior written approval for alternative compliance from the authorized BOEM official.</p> <p>(2) In the case of USEPA documents, you may always use the most recent version approved by the USEPA.</p>
<i>When will BOEM grant me a right-of-use and easement, and what requirements must I meet?</i>	550.160(f)	<p>If you apply for a RUE with a facility as defined in § 550.302 or you hold a RUE with such a facility, then you must submit the information required by § 550.205, except that the ten-year periodic review requirement in § 550.310(c) may be waived by the Regional Supervisor. For the purposes of this section, any provisions of those sections applicable to a lessee or operator should be read to refer equally to any RUE applicant or any holder thereof. If the RUE is approved or held as part of an existing or proposed plan, no additional air quality requirements would apply to the plan.</p>	<p>As discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that this provision be deleted.</p>	<p>If you apply for a RUE with a facility as defined in § 550.302 or you hold a RUE with such a facility, then you must submit the information required by § 550.205, except that the ten-year periodic review requirement in § 550.310(c) may be waived by the Regional Supervisor. For the purposes of this section, any provisions of those sections applicable to a lessee or operator should be read to refer equally to any RUE applicant or any holder thereof. If the RUE is approved or held as part of an existing or proposed plan, no additional air quality requirements would apply to the plan.</p>
<i>What region-wide offshore air emissions data must I provide?</i>	550.187(a)	<p>OCS emissions inventory. You, as a lessee, an operator, or a holder of a RUE or pipeline ROW (whether or not that ROW includes an accessory structure), must collect and maintain information regarding all air pollutant emissions from all emissions sources associated with your operations. You must retain this information for a period of no less than 10 years. You must submit this information to the appropriate regional office on an ongoing basis according to a schedule corresponding to the schedule for the National Emissions Inventory as established by the USEPA. If you have an emissions source that generates facility emissions that have a potential to emit (PTE) such that it would qualify as a Type A source according to USEPA's regulations in table 1 of appendix A of subpart A ("Emission Thresholds by Pollutant for Treatment as Point Source") of 40 CFR 51.50, then, beginning in either 2017 or the next reporting period after [EFFECTIVE DATE OF THE FINAL RULE], you must report this information according to the timeframes specified in 40 CFR 51.30(b).</p>	<p>Throughout the proposed terms "lessee" and "operator" appear to be used interchangeably. It is requested that where these terms appear that the term "designated operator" be used to ensure that it is clear that the designated operator of any OCS facility is the responsible party. This approach is consistent with implementation of other OCS requirements.</p> <p>As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants required for the inventory are criteria and precursor air pollutants.</p> <p>81 Fed. Reg. at 19751 acknowledges that USEPA also estimates mobile source emissions of commercial marine vessels, which makes the inclusion of marine support craft into the OCS emission inventory unnecessary. Furthermore as discussed in Section 1.2.4 of our comments BOEM does not have the authority to regulate MSCs. As such, we request that MSCs be excluded from emission inventory requirements as well as all provisions of this regulation.</p> <p>As discussed in Section 11.5 of our comments, a record retention period of 5 years or the life of the plan, whichever is shorter, aligns with similar USEPA and State air quality programs. We are not aware of any other air quality programs that require a 10-year record retention schedule.</p> <p>BOEM is the lead agency for air quality in the Western and Central Gulf of Mexico, and the Arctic OCS regions. Therefore, we request the deletion of any references to USEPA requirements for the National Emissions Inventory. It is incumbent on BOEM to coordinate with USEPA to ensure that emission inventories for OCS facilities are coordinated with USEPA's schedule for the National Emissions Inventory. BOEM may elect to continue its current process by which it communicates upcoming agency collection activities via the NTL mechanism (e.g., BOEM 2014-G01).</p> <p>Finally, as explained in Section 2.8 of our comments the changes proposed in this rulemaking are significant and will require time for operators and BOEM staff to understand and implement. Therefore, it is critical that a phase-in period be incorporated into the implementation of the final rule. It is requested that additional time be provided to allow the regulated community and BOEM staff to develop compliance programs to meet the requirements of the final rule. This additional time is justified since the new requirements were not published as an Advanced Notice of Proposed Rulemaking which would have allowed more time for public comment, and allowed for more time for the development of compliance programs.</p>	<p>OCS emissions inventory. You, as a lessee, an designated operator, or a holder of a RUE or pipeline ROW (whether or not that ROW includes an accessory structure), must collect and maintain information regarding all criteria and precursor air pollutant emissions from all emissions sources as identified in your plan associated with your operations, excluding MSCs. You must retain this information for a period of no less than five years or the life of the plan, whichever is shorter. You must submit this information to the appropriate regional office on an ongoing basis according to a schedule established by BOEM, corresponding to the schedule for the National Emissions Inventory as established by the USEPA. If you have an emissions source that generates facility emissions that have a potential to emit (PTE) such that it would qualify as a Type A source according to USEPA's regulations in table 1 of appendix A of subpart A ("Emission Thresholds by Pollutant for Treatment as Point Source") of 40 CFR 51.50, then, beginning in either 2017 or the next reporting period after [EFFECTIVE DATE OF THE FINAL RULE], you must report this information according to the timeframes specified in 40 CFR 51.30(b).</p>
	550.187(b)	<p>The information provided must include the emissions of or the activity data necessary to calculate the emissions of stationary</p>	<p>The terms "stationary source" and "non-stationary source" as used in this subsection are not defined in the proposed rule and do not align with the remainder of the proposed</p>	<p>The information provided must include the emissions of or the activity data necessary to calculate the emissions of stationary emissions sources described in your plan, excluding MSCs.</p>

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		emissions sources, including all facilities, and all non-stationary sources, including MSC(s) and any other non-stationary emissions source(s) of air pollutants above the OCS or above State submerged lands that operate in support of your facility or facilities, as determined by the Regional Supervisor. You may request that the owner of such non-stationary emissions source(s) provide the information to BOEM or a BOEM-designated agent, but if the owner does not provide the information, the lessee, operator, or RUE or pipeline ROW holder is still responsible for submitting the required information.	regulatory language, which primarily uses the term emission source. Deleting the use of terms "stationary source" and "non-stationary source" will provide further clarity and eliminate unnecessary regulatory text. As discussed in Section 1.2.4 of our comments, BOEM lacks the authority to regulate MSCs. As such, we proposed the removal of the requirement for the operator to provide information on emissions on the MSCs.	including all facilities, and all non-stationary sources, including MSC(s) and any other non-stationary emissions source(s) of air pollutants above the OCS or above State submerged lands that operate in support of your facility or facilities, as determined by the Regional Supervisor. You may request that the owner of such non-stationary emissions source(s) provide the information to BOEM or a BOEM-designated agent, but if the owner does not provide the information, the lessee, operator, or RUE or pipeline ROW holder is still responsible for submitting the required information.
	550.187(c)	As part of the information required in this section, you must submit, in a form and manner as specified by the Regional Supervisor: (1) Your facility and equipment usage, including hours of operation at each percent of capacity for each emissions source; and/or (2) Your monthly and annual fuel consumption showing the quantity, type, and sulphur content of fuel used for each emissions source that generates air pollutants in connection with operations on the OCS. (3) The information provided should be at a sufficient level of detail so as to facilitate BOEM's compilation of a comprehensive OCS emissions inventory of air pollutants. (4) You must classify the emissions according to the appropriate Source Classification Codes (SCCs) as defined by the USEPA in FIRE Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, incorporated by reference in § 550.198(b)(1)(iv).	To be consistent with the proposed approach that each operator will be required to specify the specific monitoring requirements as part of their plan submittal, we are requesting that the detailed items identified in § 550.187(c)(1-4) be deleted as they may conflict with the approved plan. As discussed in Section 11.2 of our comments, BOEM will have the opportunity to review and approve all proposed emission source monitoring requirements prior to plan approval. See additional comments below under § 550.311.	As part of the information required in this section, you must submit, in a form and manner as specified by the Regional Supervisor: (1) Your facility and equipment usage as described in your approved plan, including hours of operation at each percent of capacity for each emissions source; and/or (2) Your monthly and annual fuel consumption showing the quantity, type, and sulphur content of fuel used for each emissions source that generates air pollutants in connection with operations on the OCS. (3) The information provided should be at a sufficient level of detail so as to facilitate BOEM's compilation of a comprehensive OCS emissions inventory of air pollutants. (4) You must classify the emissions according to the appropriate Source Classification Codes (SCCs) as defined by the USEPA in FIRE Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, incorporated by reference in § 550.198(b)(1)(iv).
	550.187(d)	(d) The Regional Director may waive or permit delay in compliance with the requirements of this section on a region-wide basis.	No comment regarding this requirement.	N/A
Documents incorporated by reference.	550.198(a)	(1) Certain material is incorporated by reference into this part with the approval of the Director of the <i>Federal Register</i> under 5 U.S.C. 552(a) and 1 CFR part 51. In each instance, the applicable document is the one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. To enforce any edition other than that specified in this section, BOEM will publish a document in the <i>Federal Register</i> and the material will be available to the public. All approved material is available for inspection at the Bureau of Ocean Energy Management, Office of Policy, Regulation and Analysis, 45600 Woodland Road, Sterling, Virginia 20166 or by phone at (703)977-1610, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or refer to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html . (2) The effect of incorporation by reference of a document into the regulations in this part is that the incorporated document is a regulatory requirement. When a section in this part incorporates all of a document, you are responsible for complying with the provisions of that entire document, except to the extent that the section which incorporates the document by reference provides otherwise. When a section in this part incorporates part of a document, you are responsible for complying with that part of the document as provided in that section. BOEM incorporated each document or specific portion by reference in the sections noted. The entire document is incorporated by reference, unless the text of the corresponding sections in this part calls for compliance with specific portions of the listed documents. In each instance, the applicable document is the specific edition or specific edition and supplement or addendum cited in this section.	The documents proposed for incorporation by reference under this paragraph are either reference documents that do not contain compliance requirements (e.g. USEPA AP-42), or the documents are standards that are required by other regulatory requirements (e.g. MARPOL Annex VI). It is not necessary to incorporate these documents by reference as compliance requirements. These documents are either existing compliance requirements, or are not "compliance documents" at all, such as the USEPA AP-42 or the MOVES Users Guide. These documents were developed as guidance documents not regulatory requirements and should remain so. Therefore, it is requested that BOEM remove § 550.198(a)-(d) in their entirety.	(1) Certain material is incorporated by reference into this part with the approval of the Director of the <i>Federal Register</i> under 5 U.S.C. 552(a) and 1 CFR part 51. In each instance, the applicable document is the one specifically referred to, including any referenced supplement or addendum, and not any other version, supplement or addendum, even if by the same author, agency or publisher. To enforce any edition other than that specified in this section, BOEM will publish a document in the <i>Federal Register</i> and the material will be available to the public. All approved material is available for inspection at the Bureau of Ocean Energy Management, Office of Policy, Regulation and Analysis, 45600 Woodland Road, Sterling, Virginia 20166 or by phone at (703)977-1610, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or refer to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html . (2) The effect of incorporation by reference of a document into the regulations in this part is that the incorporated document is a regulatory requirement. When a section in this part incorporates all of a document, you are responsible for complying with the provisions of that entire document, except to the extent that the section which incorporates the document by reference provides otherwise. When a section in this part incorporates part of a document, you are responsible for complying with that part of the document as provided in that section. BOEM incorporated each document or specific portion by reference in the sections noted. The entire document is incorporated by reference, unless the text of the corresponding sections in this part calls for compliance with specific portions of the listed documents. In each instance, the applicable document is the specific edition or specific edition and supplement or addendum cited in this section.

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	550.198(b)	Environmental Protection Agency, Office of Air and Radiation, 1200 Pennsylvania Ave, NW, MS6101A, Washington, DC 20460. (1) AP 42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, January 1995, incorporated by reference at § 550.205(b). (2) Motor Vehicle Emission Simulator (MOVES), User Guide, Assessment and Standards Division, Office of Transportation and Air Quality, EPA-420-B-14-055, July 2014, incorporated by reference at § 550.205(b). (3) User's Guide for the Final NONROAD2005 Model, EPA420-R-05-013, December 2005 incorporated by reference at § 550.205(b). (4) FIRE (Factor Information Retrieval System) Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, EPA 454-R-95-012, August 1995, incorporated by reference at § 550.187(c).	See comment under § 550.198(a).	Environmental Protection Agency, Office of Air and Radiation, 1200 Pennsylvania Ave, NW, MS6101A, Washington, DC 20460. (1) AP 42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, January 1995, incorporated by reference at § 550.205(b). (2) 40 CFR-61 Motor Vehicle Emission Simulator (MOVES), User Guide, Assessment and Standards Division, Office of Transportation and Air Quality, EPA-420-B-14-055, July 2014, incorporated by reference at § 550.205(b). (3) User's Guide for the Final NONROAD2005 Model, EPA420-R-05-013, December 2005 incorporated by reference at § 550.205(b). (4) FIRE (Factor Information Retrieval System) Version 5.0: Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, EPA 454-R-95-012, August 1995, incorporated by reference at § 550.187(c).
	550.198(c)	Federal Aviation Administration (FAA), Office of Environment and Energy, (AEE-100), 800 Independence Avenue, SW, Washington, DC 20591. (1) Aviation Environmental Design Tool (AEDT) User's Guide, Version 2B, July 2015 (as amended) incorporated by reference at § 550.205(b). (2) Aviation Environmental Design Tool (AEDT), Version 2B, AEDT Standard Input File (ASIF) Reference Guide, May 2015 (as amended) incorporated by reference at § 550.205(b).	See comment under § 550.198(a).	Federal Aviation Administration (FAA), Office of Environment and Energy, (AEE-100), 800 Independence Avenue, SW, Washington, DC 20591. (1) Aviation Environmental Design Tool (AEDT) User's Guide, Version 2B, July 2015 (as amended) incorporated by reference at § 550.205(b). (2) Aviation Environmental Design Tool (AEDT), Version 2B, AEDT Standard Input File (ASIF) Reference Guide, May 2015 (as amended) incorporated by reference at § 550.205(b).
	550.198(d)	International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, or http://www.imo.org , or 44-(0)20-7735-7611. (1) Revised MARPOL (Marine Pollution) Annex VI Regulations for the Prevention of Air Pollution from Ships, and NOX Technical Code [NTC] 2008, 2009 edition, incorporated by reference at § 550.205(b). (2) Revised MARPOL Annex VI Regulations for the Prevention of Pollution from Ships ("2008 Annex VI"), incorporated by reference at § 550.205(b). (3) NOX Technical Code 2008, incorporated by reference at § 550.205(b).	See comment under § 550.198(a).	International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, or http://www.imo.org , or 44-(0)20-7735-7611. (1) Revised MARPOL (Marine Pollution) Annex VI Regulations for the Prevention of Air Pollution from Ships, and NOX Technical Code [NTC] 2008, 2009 edition, incorporated by reference at § 550.205(b). (2) Revised MARPOL Annex VI Regulations for the Prevention of Pollution from Ships ("2008 Annex VI"), incorporated by reference at § 550.205(b). (3) NOX Technical Code 2008, incorporated by reference at § 550.205(b).
	550.200(b)	Remove the definition of "Offshore vehicle"	No comment regarding this requirement.	N/A
What air emissions information must be submitted with my Plan (EPs, DPPs, DOCs, or application for a RUE, pipeline ROW, or lease term pipeline)?	550.205	All of the terms used in this section have the meaning described in § 550.302, unless defined in § 550.105. Except if excluded from the Air Quality Regulatory Program (AQRP) by paragraph (o) of this section, the requirements in this section apply to all plans, RUE, pipeline ROW, and lease term pipeline applications submitted in any area of the OCS in which the Secretary of the Interior has authority to regulate air quality on the OCS. Your plan must contain the following criteria air pollutant and major precursor air pollutant emissions information:	As explained in Section 2.8, the changes proposed in this rulemaking are significant and will require time for operators and BOEM staff to understand and implement. Therefore, it is critical that a phase-in period be incorporated into the implementation of the final rule. It is requested that additional time be provided to allow the regulated community and BOEM staff to develop compliance programs to meet the requirements of the final rule. This additional time is justified since the new requirements were not published as an Advanced Notice of Proposed Rulemaking which would have allowed more time for public comment, and allowed for more time for the development of compliance programs. Finally, as discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect offshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that RUE and ROW be deleted from this provision.	All of the terms used in this section have the meaning described in § 550.302, unless defined in § 550.105. Except if excluded from the Air Quality Regulatory Program (AQRP) by paragraph (o) of this section, the requirements in this section apply to all plans, RUE, pipeline ROW, and lease term pipeline applications submitted in any area of the OCS in which the Secretary of the Interior has authority to regulate air quality on the OCS. Your plan must contain the following criteria air pollutant and major precursor air pollutant emissions information:
	550.205(a)	Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan. This includes each emissions source used during the construction, installation (including well protection structure installation), and operation of any exploration, testing, drilling (including well test firing), development, or production equipment or facility or facilities (including every platform or manmade island included in your plan). You must account for the air pollutant emissions sources associated with all drilling operations, including workovers and recompletions, sidetracking and from pipeline construction. You must include emissions sources associated with your use of oil or gas produced from	The level of detail required for emissions sources described in plans is a significant concern in this proposed rule. It is appropriate to include substantial sources of emissions that account for the majority of OCS air emissions. However, as discussed above in our proposed addition of insignificant activity definition in § 550.105 and in Section 12.2 of our comments it is not practicable to include small, insignificant sources that do not make significant contributions to overall facility emissions. As such, we request that insignificant activities be excluded from the definition of emission sources. As discussed previously and in Section 12.4 of our comments, BOEM does not have the authority to regulate MSCs. Therefore, MSCs are requested to be removed from this provision.	Emissions sources. You must list and describe every emissions source on or associated with any facility or facilities and MSC(s) described in your plan, to the extent practicable. This includes each emissions source used during the construction, installation (including well protection structure installation), and operation of any exploration, testing, drilling (including well test firing), development, or production equipment or facility or facilities (including every platform or manmade island included in your plan). You must account for the criteria air pollutant emissions sources associated with all drilling operations, including workovers and recompletions, sidetracking and from pipeline construction. You must include emissions sources associated with your use of oil or gas produced from your lease. The list of emissions sources must cover the duration of the plan's proposed activities. Emission sources deemed as insignificant activities as defined in § 550.105 are exempt from all air quality requirements in 30 CFR 550.

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		your lease. The list of emissions sources must cover the duration of the plan's proposed activities.	Inclusion of the sentence, "You must include emissions sources associated with your use of oil or gas produced from your lease" raises additional concerns. The proposed wording makes this requirement potentially limitless. It is possible that this sentence could be interpreted to include onshore sources such as refineries and chemical plants which are unrelated to OCS facilities, and over which BOEM has no jurisdiction. If the intent of this language is to capture how oil or natural gas may be used on an OCS facility for fuel or other purposes, emissions estimates for these activities would already be captured by as part of normal emission estimation practices, therefore the sentence is unnecessary. Finally, as discussed in Section 12.4 of our comments the proposed draft "AQR" spreadsheet contain material deficiencies to estimate emissions as defined in BOEM's proposed definition.	
	550.205(a)(1)	For each emissions source, you must identify, to the extent practicable: (i) Equipment type and number, manufacturer, make and model, location, purpose (i.e. the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics; (ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and (iii) The frequency and duration of the proposed use.	BOEM proposes to require identification of MSCs and their annual, rolling 12-month, and hourly emissions, and to identify what other facilities would be served by a given MSC. With the exception of vessels engaged in geological and geophysical exploration (see 43 U.S.C. §1340(a)), BOEM's regulatory authority under OCSLA is limited to "artificial islands, ..., and ..., installations, ..., permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources therefrom." ¹ This does not include vessels (except perhaps those attached to such artificial islands and installations for the purpose of exploring for, developing, or producing OCS resources). OCS operators contract for services, but cannot be certain which vessel a contractor will assign – certainly not at the point exploration or development plans are being submitted. Likewise, identification of other offshore facilities to be served by a given MSC is unknown. Furthermore, BOEM asks that applicants identify the emissions per trip and multiply those emissions by the number of trips per year to identify annual emissions; this is impossible to project because there is no way to anticipate what route a support vessel will take years in advance of the trip. Nor is it practicable for an OCS operator to predict the types of support vessel activities that may be necessary over a 10 year span. Given these uncertainties, an operator cannot know what fraction of the trip emissions should be attributed to its facility. Nevertheless, BOEM's attempt to impose such MSC regulatory requirements demonstrates a lack of understanding of the support vessel operations in the GOM. Furthermore, as discussed in Section 12.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, we request that MSCs be specifically excluded from this provision. Finally, as discussed in comments to § 550.205(a) above, insignificant activities should be exempt from data collection activities. In addition, the AQR spreadsheets that accompany the proposed rule are not constructed such that this information can be collected. See Section 12.4 of our comments for list of items BOEM should address.	For each emissions source, excluding MSCs and insignificant activities, you must identify, to the extent practicable: (i) Equipment type and number, manufacturer, make and model, location, purpose (i.e., the intended function of the equipment and how it would be used in connection with the proposed activities covered by the plan), and physical characteristics; (ii) The type and sulphur content of fuel stored and/or used to power the emissions source; and (iii) The frequency and duration of the proposed use.
	550.205(a)(2)	For every engine on each facility, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest maximum rated capacity for the type of engine which you will use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.	See comments under § 550.205(a)(1) above.	For every engine on each facility, except those emissions sources excluded as insignificant activities, including non-road engines, marine propulsion engines, or marine auxiliary engines, in addition to the information specified under paragraph (a)(1) of this section, you must identify and provide the engine manufacturer, engine type, and engine identification, and the maximum rated capacity of the engine (given in kilowatts (kW)), if available. If you have not yet determined what specific engine will be available for you to use, you must provide analogous information for an engine with the greatest emissions for the type of engine which you will plan to use. If the engine has any physical design or operational limitations and you choose to base your emissions calculations on these limitations, then you must provide documentation of these physical design or operational limitations.

¹ 43 U.S.C. § 1333(a)

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	550.205(a)(3)	For engines on MSCs, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available, indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.	As discussed in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, we request that this provision be deleted from the regulation.	For engines on MSCs, including marine propulsion and marine auxiliary engines, in addition to the information specified under paragraph (a)(1) and (2) of this section, you must provide the engine displacement and maximum speed in revolutions per minute (rpm). If the specific rpm information is not available, indicate whether the rpm would be less than 130 rpm, equal to or greater than 130 rpm but less than 2,000 rpm, or equal to or greater than 2,000 rpm, based on best available information. If the actual MSC engine types needed for calculating emissions are unknown or cannot be verified, assume an MSC possessing the maximum potential emissions for the type of MSC you would typically use for your planned operations.
	550.205(a)(4)	For offshore vehicles, you must provide the information specified under paragraph (a)(1) of this section. If the actual offshore vehicle engine types needed for calculating emissions are unknown or cannot be verified, assume an offshore vehicle possessing the maximum emissions for the types of offshore vehicles you would typically use for your planned operations.	As discussed in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, we request that this provision be deleted from the regulation.	For offshore vehicles, you must provide the information specified under paragraph (a)(1) of this section. If the actual offshore vehicle engine types needed for calculating emissions are unknown or cannot be verified, assume an offshore vehicle possessing the maximum emissions for the types of offshore vehicles you would typically use for your planned operations.
	550.205(a)(5)	For any emissions source not described above, you must provide all information needed to calculate and verify the associated emissions, such as volumes vented, volumes flared, size of tank, and number of components.	See comments under § 550.205(a) above.	For any emissions source, excluding insignificant activities, not described above, you must provide all information needed to calculate and verify the associated emissions, such as volumes vented, volumes flared, size of tank, and number of components.
	550.205(b)	Emissions factors. For each emissions source identified under paragraph (a) of this section, you must identify the most appropriate emissions factors used to calculate the emissions for every criteria air pollutant and major precursor air pollutant emitted by that source.	<p>Manufacturer engine certifications and performance guarantees are designed to meet pollutant-specific emissions criteria. Additionally, other non-engine emissions source factors are typically pollutant specific. As such, we request changes to clarify that this evaluation is done on a pollutant basis. This would alleviate concerns that engine certifications or emissions testing that don't address all pollutants could be used in conjunction with other types of emission factors (i.e., AQR default factors.)</p> <p>Furthermore, some emission calculations do not lend themselves to a "published" emission factor. The emission factor can be derived for the site specific source information. This would include glycol dehydrators, crude oil/condensate storage tanks, and amine gas sweetening units. We request that BOEM clarify that model/software (e.g., GLYCALC, E&P Tanks) used to calculate emissions from glycol dehydrators, crude oil/condensate storage tanks, and amine gas sweetening units are allowed under (b)(2)(ii).</p> <p>As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria and precursor pollutants.</p>	Emissions factors. For each emissions source identified under paragraph (a) of this section, you must identify for each criteria and precursor pollutant the most appropriate emissions factors used to calculate the emissions for every criteria air pollutant and major precursor air pollutant emitted by that source.
	550.205(b)(1)	Emissions testing. You may use actual emissions amounts as measured from emissions testing conducted on a specific emissions source, in lieu of the standards or emissions factors for that source which are described in paragraph (b)(2) of this section. However, if none of the methods in paragraph (b)(2) of this section are applicable, you must conduct stack testing on the emissions source to determine the appropriate emissions factor. The data from stack testing may be used only for the engine for which the stack testing was conducted. When determining the emissions factors through testing, you must consider: (i) Test points and procedures. (A) In general, test points should be devised based on actual operations as opposed to using the test points and engine loads contained in one of the various marine duty cycles. If, based on the unique circumstances of the proposed project, this is impracticable, an alternative approach for defining test points may be implemented with the approval of the Regional Supervisor. It cannot be assumed that emissions per hour or emissions per kW hour or horse-power hour from large main engines on drill ships and platforms are highest during full load or near-full load operation. The emissions factor and emission per hour or emissions per kW hour or horse-power hour for the operation that is actually expected should be determined, and the emissions under 90% load should be used only if emissions at this load are the highest and thus conservative. (B) Testing should be done consistent with the procedures outlined in 40 CFR part 53 to the maximum extent practicable.	<p>In general, we support the use of actual emissions as measured by emissions testing as an option to estimate emissions in the plan. This subsection presents conflicting language whereby in some places, the focus is on emissions source and in other places the focus is on engines. It is requested that a consistent use of the term emission source be used in this subsection.</p> <p>The inclusion of specific language on test points and procedures is unnecessarily specific and since the basis for the emission factor will have to be identified in the plan submittal, BOEM will have the opportunity to review and comment on the acceptability of the emissions test data, including test points and procedures as part of the plan approval process.</p> <p>We request that BOEM include language that allows for adjustments of measured SO2 emissions (if warranted) based on the sulphur fuel contents which would be identified as required in § 550.205(a). Inclusion of such language will alleviate the need for re-testing if the sulphur levels in fuel differ from what was measured during the emissions test. Alternatively, BOEM could elect to offer the use of a mass-balance approach to estimating SO2 emissions based on the sulphur levels in the fuel types. Many state and federal agencies accept a similar methodology to estimate SO2 emissions.</p> <p>Furthermore, many operators have multiple versions of the same equipment across their portfolio. It would be beneficial to the OCS operators if the BOEM would allow for the use of emissions test results on similar equipment (i.e., same make and model.)</p> <p>Finally, it should be noted that 40 CFR part 53 refers to Ambient Air Monitoring Reference and Equivalent Methods. These methods are not used for stack testing. The reference should be for applicable test methods in 40 CFR part 60, Appendix A.</p>	Emissions testing. You may use actual emissions amounts as measured from emissions testing conducted on a specific emissions source, in lieu of the standards or emissions factors for that source which are described in paragraph (b)(2) of this section. However, if none of the methods in paragraph (b)(2) of this section are applicable, you must conduct stack testing on the emissions source to determine the appropriate emissions factor. The data from stack testing may be used only for the engine emission source for which the stack testing was conducted. When determining the emission factors through testing, you must consider: (i) Test points and procedures. (A) In general, test points should be devised based on actual operations as opposed to using the test points and engine loads contained in one of the various marine duty cycles. If, based on the unique circumstances of the proposed project, this is impracticable, an alternative approach for defining test points may be implemented with the approval of the Regional Supervisor. It cannot be assumed that emissions per hour or emissions per kW-hour or horse-power hour from large main engines on drill ships and platforms are highest during full load or near-full load operation. The emissions factor and emission per hour or emissions per kW-hour or horse-power hour for the operation that is actually expected should be determined, and the emissions under 90% load should be used only if emissions at this load are the highest and thus conservative. (B) Testing should be done consistent with the procedures outlined in 40 CFR part 60, Appendix A to the maximum extent practicable. Where the unique circumstances or requirements of the proposed operations make such procedures impracticable, alternative procedures may be implemented with the approval of the Regional Supervisor. As appropriate, you must use the General Provisions for Determining Standards of Performance for New Stationary Sources, at 40 CFR 60.8. (ii) Fuel. You must ensure that the fuel used in the testing to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation and that the sulphur content of the fuel is the same as that which will be used in the engine. You may adjust your measured SO2 emissions to account for the sulphur levels identified for the relevant emission source.

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		Where the unique circumstances or requirements of the proposed operations make such procedures impracticable, alternative procedures may be implemented with the approval of the Regional Supervisor. As appropriate, you must use the General Provisions for Determining Standards of Performance for New Stationary Sources, at 40 CFR 60.8. (ii) Fuel. You must ensure that the fuel used in the testing to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation and that the sulphur content of the fuel is the same as that which will be used in the engine.		identified in 550.205(a)
	550.205(b)(2)(i)	In the event that you elect not to measure the actual emissions for any given emissions source, select an emissions factor from one of the following references (references are listed in priority order; you may use a method only if all the methods identified above it are not available): (i) You may use the emission factor(s) that are vendor-guaranteed or provided by the manufacturer of the specific emissions source, if available; where a manufacturer has not provided an emissions factor for the emissions source you propose to use, you may use a manufacturer's emissions factor for a similar source only if you can demonstrate to the satisfaction of the Regional Supervisor that the emissions generated by your emissions source are the same as or lower than that for which a manufacturer's emissions factor is available. If you elect to use vendor-guaranteed or manufacturer data, you must demonstrate that: (A) The fuel used by the manufacturer to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation; and (B) The actual engine has not been modified outside the configuration used to generate the emission factors; thus, the emission factors used in the plan must represent the actual pattern of use for that equipment in operations.	Rather than restricting operators to a priority list of emission factors, the list included in § 550.205(b)(2)(i)-(vi) should be presented as a list of emission estimation methodology options, either within the rule text or as a separate guidance document. In reviewing various state and federal agency permitting programs, the process by which an emission factor is selected is at the discretion of the owner/operator of the facility. Onshore facilities are typically not restricted to a hierarchy priority of emission estimation methodologies. In light of all the possible emission estimation methodologies, and to account for advancements in such methodologies, BOEM should leave selection of the methodology to the OCS operators. Also, by including such a detailed list of emission estimation methodologies as part of the rule text, BOEM is limiting their ability to make changes to the list without triggering the rulemaking process. It is requested that BOEM remove this very prescriptive and limiting process. As per § 550.205(b)(3), BOEM retains the ability to review the selected emission factor and require the use of a different emission factor or to require emissions testing if a more appropriate factor is not available.	In the event that you elect not to measure the actual emissions for any given emissions source, you may select an emissions factor from one of the following references subject to agency approval (references are listed in priority order; you may use a method only if all the methods identified above it are not available): (i) You may use the emissions factor(s) that are vendor-guaranteed or provided by the manufacturer of the specific emissions source, if available; where a manufacturer has not provided an emissions factor for the emissions source you propose to use, you may use a manufacturer's emissions factor for a similar source only if you can demonstrate to the satisfaction of the Regional Supervisor that the emissions generated by your emissions source are the same as or lower than that for which a manufacturer's emissions factor is available. If you elect to use vendor-guaranteed or manufacturer data, you must demonstrate that: (A) The fuel used by the manufacturer to generate the emission factors reflects the type of fuel that will be used by the engine in actual operation; and (B) The actual engine has not been modified outside the configuration used to generate the emission factors; thus, the emission factors used in the plan must represent the actual pattern of use for that equipment in operations.
	550.205(b)(2)(ii)	You may use emissions factors generated from source tests required by the USEPA OCS permits as BOEM emission estimates for a specific rig. If emissions factors were not generated through testing for a particular engine, emissions factors generated from a recent and similar permit engine may be used. Data from a rig from the same manufacturer, having an engine of the same model and year is generally allowed, unless the Regional Supervisor has a reason to believe that such data may not be accurate or reliable.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, we request that this subsection be eliminated. If BOEM elects not to remove this section, we seek to clarify that the relevant manufacturer should be the engine manufacturer and not the rig manufacturer. Where the term rig appears in this subsection, we would request the term engine be used. Furthermore, if BOEM elects not to remove this section, it should address the mechanism by which the various operators will have knowledge of which engines may have had source tests conducted pursuant to an USEPA OCS permit. This information is not readily available to all operators.	You may use emissions factors generated from source tests required by the USEPA OCS permits as BOEM emission estimates for a specific rig. If emissions factors were not generated through testing for a particular engine, emissions factors generated from a recent and similar permit engine may be used. Data from a rig from the same manufacturer, having an engine of the same model and year is generally allowed, unless the Regional Supervisor has a reason to believe that such data may not be accurate or reliable.
	550.205(b)(2)(iii)	You may use a model or table, as appropriate, developed by the USEPA or FAA, if available and appropriate to the emissions source, and you may use the emissions factors from that model or table. (A) For commercial marine engines operating aboard MSC, excluding vehicles and aircraft, apply emission factors based on the classification of the engine (i.e., category 1, category 2, and category 3), the year the engine was manufactured, and the maximum engine power expressed in kW. Some category 3 engine emission factors are based on rpm rather than maximum engine power. Engine category, year, model, and emission factors, by kW power rating, are given in 40 CFR 1042.101 for category 1 and category 2 commercial engines and consider the useful life provisions of each engine category. Engine category, year, model, and emission factors, by rpm rating, are given in 40 CFR 1042.104 for category 3 commercial marine engines, and also consider the useful life provisions for each engine category. (B) For non-road equipment used on the drill ships or platforms, non-road emission factors, rather than marine engine emission factors may be used. The primary source for these emission factors is the NONROAD portion of the Motor Vehicle Emission	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments: - We request BOEM to allow the use of process modelling to estimate emissions, specifically for storage containers for which the USEPA TANKS 4.0 program is a poor emissions estimation tool; - The USEPA TANKS program is a useful tool for regularly (i.e., cylindrical) shaped storage containers. Storage containers on OCS facilities may come in various shapes that will not easily be represented in the TANKS program. Given the minimal emissions of most storage containers on OCS facilities, we request the use of default emission factor similar to that employed in the current AGR emission spreadsheet; note that many storage containers may fit within the proposed insignificant activity list (see comments to 550.205(a)) and therefore, emissions estimation may not be warranted. - We request BOEM to allow models or tables approved by USEPA or FAA. "You may use a model or table, as appropriate, developed or approved by the USEPA or FAA, if available and appropriate to the emissions source, and you may use the emissions factors from that model or table." - The referenced MOVES model cited in the proposed rule may not be a user friendly model for operators and we request that the use of a default emission factor similar to	You may use a model or table, as appropriate, developed by the USEPA or FAA, if available and appropriate to the emissions source, and you may use the emissions factors from that model or table. (A) For commercial marine engines operating aboard MSC, excluding vehicles and aircraft, apply emission factors based on the classification of the engine (i.e., category 1, category 2, and category 3), the year the engine was manufactured, and the maximum engine power expressed in kW. Some category 3 engine emission factors are based on rpm rather than maximum engine power. Engine category, year, model, and emission factors, by kW power rating, are given in 40 CFR 1042.101 for category 1 and category 2 commercial engines and consider the useful life provisions of each engine category. Engine category, year, model, and emission factors, by rpm rating, are given in 40 CFR 1042.104 for category 3 commercial marine engines, and also consider the useful life provisions for each engine category. (B) For non-road equipment used on the drill ships or platforms, non-road emission factors, rather than marine engine emission factors may be used. The primary source for these emission factors is the NONROAD portion of the Motor Vehicle Emission Simulator (MOVES) model (http://www.epa.gov/ostaq/models/moves/index.html), as incorporated by reference at § 550.108. Depending on the type of engine, the NONROAD2008A Model may also be used, as incorporated by reference at § 550.108. That model is available at http://www.epa.gov/ostaq/moves/index.html . (C) For storage tanks, use the USEPA's TANKS model, or the most recent USEPA-recommended update or replacement to generate emission factors, such as the AP-43

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		<p>Simulator (MOVES) model (http://www.epa.gov/otaq/models/moves/index.htm), as incorporated by reference at § 550.198. Depending on the type of engine, the NONROAD2008A Model may also be used, as incorporated by reference at § 550.198. That model is available at http://www.epa.gov/otaq/nonroad.html.</p> <p>(C) For storage tanks, use the USEPA's TANKS model, or the most recent USEPA-recommended update or replacement, to generate emission factors, such as the AP-42 Compilation of Emissions Factors, Chapter VII, incorporated by reference at § 550.198.</p> <p>(D) In the event that you are required to report emissions data from aircraft, use emissions factors generated by the AEDT, incorporated by reference at § 550.198, or from another appropriate model, or set of models, approved by the FAA, in the event that the AEDT does not contain emissions factors for the relevant aircraft proposed in your plan. AEDT emissions factors are available at: http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aedt/</p>	<p>that employed in the current AQR spreadsheet.</p> <ul style="list-style-type: none"> - Some operators may have diesel engines that are certified to meet the requirements in 40 CFR 60 Subpart IIII and operated in a certified manner. We request the use of applicable emission factors in 40 CFR 60 Subpart IIII, Tables 1 – 4. This could affect backup and emergency diesel engine drivers for generators, pumps, air compressors. - Various sections of the proposed rule discuss emissions from "flashing". The documents incorporated by reference (e.g., EPA TANKS model and AP-42) do not calculate "flash" emissions from crude oil condensate or produced water; however, there are multiple other generally accepted mechanisms (e.g., Peng-Robinson equation of state models - PROMAX, HYSIS, PROSIM, VMGSim) or API 4697 E&P Tanks Ver 3 program for flashing calculations. These models are approved by USEPA for 40 CFR 98 Subpart W calculations (REF: 40 CFR 98.233(j)(1)) and for NSPS OOOO in 40 CFR 60 Subpart OOOO (REF: 40 CFR 60.5365(c)). For GOADS, BOEM used the Vasquez-Beggs equations for flash calculations for crude oil and condensate. - Similarly, to the "flashing" discussion above, the proposed rule does not include a reference document that is capable of estimating glycol dehydration unit still column vent and flash tank (gas-condensate-glycol separator) emissions. GRI-GLYCalc model is an USEPA approved model for glycol dehydration unit emission calculations – 40 CFR 63 Subparts HH and HHH. Also, GLYCalc is the model used for GOADS emission calculations since 2000. - We request that BOEM allow for use of operations and engineering judgment (in lieu of an emission factor) to estimate the volume of gas expected to be combusted in a flare or vented from an atmospheric vent. This would cover such sources as compressor blowdowns, miscellaneous sources (pneumatic devices in natural gas service) routed to flare or vent. - There are some scenarios by which direct measurement of vented volumes should be acceptable to generate an emission factor. The amount of vapors liberated during lightning operation may be measured to determine gas liberated per volume of oil loaded to generate a gas to oil ratio (GOR) for the emission factor. This could require a sample of the vapors to calculate the mass of emissions for vapor vented. The proposed rule allows use of equations in the document cited: AP-42, 5.2 Transportation and Marketing of Petroleum Liquids. 	<p>Compilation of Emissions Factors, Chapter VII, incorporated by reference at § 550.198.</p> <p>(D) In the event that you are required to report emissions data from aircraft, use emissions factors generated by the AEDT, incorporated by reference at § 550.198, or from another appropriate model, or set of models, approved by the FAA, in the event that the AEDT does not contain emissions factors for the relevant aircraft proposed in your plan. AEDT emissions factors are available at: http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aedt/</p>
	550.205(b)(2)(iv)	<p>You may use an emission factor from a published study conducted by a reputable source, such as the California Air Resources Board, a university, or research agency, if such source yields reliable emission factors or formula(s) to calculate emissions factors for certain types of engines and equipment other than for the large main engines on drilling ships and drill platforms and for locomotive-sized engines powering cranes. If an emission study is used, the study must cover representative engines, fuels, and duty cycles.</p>	<p>As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments on this subsection.</p> <ul style="list-style-type: none"> - BOEM should provide a specific size threshold instead of using terms such as "large" or "locomotive size" engines. In other sections of the proposed rule, BOEM utilizes the 900 kW threshold. 	<p>You may use an emission factor from a published study conducted by a reputable source, such as the California Air Resources Board, a university, or research agency, if such source yields reliable emission factors or formula(s) to calculate emissions factors for certain types of engines and equipment other than for the large main engines on drilling ships and drill platforms and for locomotive-sized engines powering cranes. If an emission study is used, the study must cover representative engines, fuels, and duty cycles.</p>
	550.205(b)(2)(v)	<p>For non-U.S. flagged vessels having non-USEPA-certified, MARPOL-certified marine engines, you may use the MARPOL Annex VI standards, available from the International Maritime Organization, incorporated by reference at § 550.198, or the Revised MARPOL Annex VI, Regulations for the Prevention of Pollution from Ships, incorporated by reference at § 550.198, as appropriate taking vessel flag as well as engine size into account when determining the emission factor that should apply to an engine. With respect to calculations specifically for NO_x emissions or emissions factors, any reporting must comply with the NO_x Technical Code [NTC] 2008 incorporated by reference at § 550.198. If this method is used, the plan must account for any differences in the sulphur limits of the fuel being used and the sulphur limit of the fuel used for emission testing. All fuel used by the subject drilling ships and offshore platforms must either be purchased in the U.S. or comply with applicable CAA fuel emissions requirements, unless the lessee or operator can demonstrate that it has properly accounted for any differences in emissions that may result from the use of non-U.S. fuel.</p>	<p>As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we request the following comments be considered on this subsection.</p> <ul style="list-style-type: none"> - EIAPP certificates would be issued based on test results for a parent engine. These EIAPP certificates identify the parent engine emission test result as well as the relevant Annex VI standard. The proposed rule allows for use of the Annex VI standards but is silent on the acceptability of the listed parent engine emission factor identified in the EIAPP certificate. We request BOEM allow the use of the emission factors as stated on EIAPP certificates. 	<p>For non-U.S. flagged vessels having non-USEPA-certified, MARPOL-certified marine engines, you may use the MARPOL Annex VI standards, available from the International Maritime Organization, incorporated by reference at § 550.198, or the Revised MARPOL Annex VI, Regulations for the Prevention of Pollution from Ships, incorporated by reference at § 550.198, as appropriate taking vessel flag as well as engine size into account when determining the emission factor that should apply to an engine. With respect to calculations specifically for NO_x emissions or emissions factors, any reporting must comply with the NO_x Technical Code [NTC] 2008 incorporated by reference at § 550.198. If this method is used, the plan must account for any differences in the sulphur limits of the fuel being used and the sulphur limit of the fuel used for emission testing. All fuel used by the subject drilling ships and offshore platforms must either be purchased in the U.S. or comply with applicable CAA fuel emissions requirements, unless the lessee or operator can demonstrate that it has properly accounted for any differences in emissions that may result from the use of non-U.S. fuel.</p>

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	550.205(b)(2)(vi)	For a natural gas-powered engine of any rated capacity, or for a non-road diesel-powered engine with a maximum rated capacity less than 900 kW, or for a non-engine emissions source, you may use the appropriate emissions factor from the Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Emissions Sources, or any update thereto, incorporated by reference at § 550.198; or,	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments on this subsection. <ul style="list-style-type: none"> - There is no explanation in the proposed rule that addresses the proposed restriction by which a non-road diesel engine on a platform greater than 900 kW cannot use AP-42. We request that the rating threshold be removed and the option to use AP-42 emission factors be retained for all non-road diesel engines. 	For a natural gas-powered engine of any rated capacity, or for a non-road diesel-powered engine with a maximum rated capacity less than 900 kW, or for a non-engine emissions source, you may use the appropriate emissions factor from the Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Emissions Sources, or any update thereto, incorporated by reference at § 550.198; or,
	550.205(b)(2)(vii)	If you elect to use the methods described in paragraph (b)(2)(v) or (vi) of this section, you must take appropriate account of the deterioration in the performance of the equipment based on its age and the potential variation of the actual emissions from the standard to account for the maximum potential emissions that the emissions source may emit. Given that equipment tends to operate less efficiently over time, you should make an appropriate upward adjustment in the emissions estimates for older equipment. At any time you revise your plan, including resubmissions every ten years, you must consider the age of the equipment, adjust for any change in operating efficiency, and provide the associated emissions factors in your revised or resubmitted plan, as applicable.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. If BOEM elects not to remove this section, we offer the following comments on this subsection. <ul style="list-style-type: none"> - It is not feasible to make appropriate upward adjustments in emission estimates for older equipment. Emissions of a completely overhauled engine may match that of a relatively new engine so an engine's age may not necessarily result in deterioration of an engine's emissions performance. - Furthermore, there is little to no actual emissions test data that supports BOEM's assertion that emissions increase on older equipment. The USEPA's compilation of emission factors for various emissions sources (AP-42) does not provide for age-based deterioration adjustments to emission factors. We request BOEM to remove language related to age-based adjustments to emission factors. - If BOEM requires an age-based adjustment of emission factors, we request BOEM to only require the use of deterioration factors when they have been developed by the manufacturer. For example, 40 CFR 1042.245 requires manufacturers to develop deterioration factors for certain categories of engines. Consistent with EPA's approach, the requirement to develop such factors should be placed on the engine manufacturers, not the engine purchaser. Alternatively, if BOEM insists upon requiring operators to account for engine deterioration with regards to emissions, BOEM should first conduct an Environmental Study (Pursuant to the Environmental Studies Program) to establish whether engine age corresponds to deterioration of emissions performance. 	If you elect to use the methods described in paragraph (b)(2)(v) or (vi) of this section, you must take appropriate account of the deterioration in the performance of the equipment based on its age and the potential variation of the actual emissions from the standard to account for the maximum potential emissions that the emissions source may emit. Given that equipment tends to operate less efficiently over time, you should make an appropriate upward adjustment in the emissions estimates for older equipment. At any time you revise your plan, including resubmissions every ten years, you must consider the age of the equipment, adjust for any change in operating efficiency, and provide the associated emissions factors in your revised or resubmitted plan, as applicable.
	550.205(b)(3)	If the Regional Supervisor has reason to believe that any air emissions factor used in your plan is inappropriate, or new or updated information on emissions factors becomes available, the Regional Supervisor may require you to use a different emissions factor for any emissions source for any air pollutant. The Regional Supervisor may require you to perform stack testing, in accordance with paragraph (b)(1) of this section, or some other form of validation to verify the accuracy of an emissions factor.	No comments regarding this paragraph.	N/A
	550.205(b)(4)	If you propose to utilize an engine or equipment that is not certified by the USEPA for use in the U.S., you may not use a USEPA emissions factor intended to apply to a certified engine or equipment. If you propose to utilize an engine or equipment that is USEPA-certified, then you must submit documentation of its certification.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated.	If you propose to utilize an engine or equipment that is not certified by the USEPA for use in the U.S., you may not use a USEPA emissions factor intended to apply to a certified engine or equipment. If you propose to utilize an engine or equipment that is USEPA-certified, then you must submit documentation of its certification.
	550.205(b)(5)	If your projected emissions include emissions for a U.S. flagged vessel, you must submit documentation of the USEPA-issued Certificate of Conformity for each engine on the vessel.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated. Furthermore, the proposed language is an example of overly prescriptive regulatory program whereby BOEM is requesting demonstration of compliance with another federal agency.	If your projected emissions include emissions for a U.S. flagged vessel, you must submit documentation of the USEPA-issued Certificate of Conformity for each engine on the vessel.
	550.205(b)(6)	If you propose to use any non-U.S. engine or equipment on a non-U.S. flag vessel that is not MARPOL-compliant, you may not use an emissions factor intended to apply to a MARPOL-compliant engine or equipment.	As discussed in the comments to § 550.205(b)(2)(i), we request the removal of the overly prescriptive emission factor selection process. As such, it is requested that this subsection be eliminated.	If you propose to use any non-U.S. engine or equipment on a non-U.S. flag vessel that is not MARPOL-compliant, you may not use an emissions factor intended to apply to a MARPOL-compliant engine or equipment.
	550.205(c)	Facility emissions. For each criteria and major precursor air pollutant, calculate the projected annual emissions for each of your facilities, the maximum 12 month rolling sum of facility emissions and the maximum projected peak hourly emissions using the following procedures:	As discussed in Section 8.8 of our comments, EPA assesses compliance with NAAQS using calendar block averages, not running or rolling averages. Therefore, it is requested that BOEM remove the requirement to quantify emissions for a maximum 12 month period. <p>Furthermore, we have reviewed multiple state agency permitting programs and EPA's permitting program for the Eastern Gulf of Mexico and have not identified an analogue for the calculation of maximum 12-month rolling sum of facility emissions as part of the application process that BOEM has proposed. Typically, a permit application for an onshore facility would provide estimates of the potential to emit on a calendar-year basis.</p>	Facility emissions. For each criteria and major precursor air pollutant, calculate the annual projected annual emissions for each of your facilities, the maximum 12-month rolling sum of facility emissions and the maximum peak hourly projected peak-hourly emissions using the following procedures:

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	550.205(c)(1)	Calculate total emissions generated annually by each emissions source on or physically connected to each of the facilities described in your plan that would result from the construction, installation, operation, or decommissioning of the facility. Such calculations should be done for each year that the plan states that the operator proposes to engage in operating activities, up to ten years. This calculation should be based on the maximum rated capacity of each emissions source associated with the facility, or the capacity that generates the highest rate of emissions, and the facility's maximum potential projected annual emissions, using the methods and procedures specified under paragraphs (a) and (b) of this section.	We request changes to this provision to improve clarity and to ensure emissions from OCS facilities are not over estimated. Based on the proposed wording in this provision it would imply that OCS facilities routinely run at maximum rated capacity over an entire calendar-year. Such an approach would grossly exaggerate potential emissions and ensure that many plans will exceed the EET values, where in practice, the actual emissions occurring under these plans may be significantly lower. As acknowledged by BOEM in multiple places in the preamble, this is a common practice under the existing regulatory framework as a mechanism to reduce emissions below the EET values and a concept that BOEM intended to carry forward. Additionally, the provisions of § 550.205(a)(2) allow for such measures; however, further clarity on this topic would be beneficial. As such, we have proposed revisions to clarify that projected emission estimates should be based on operators' annual maximum expected operations and not solely based on the maximum rated capacity of each emission source. This change will add further clarity that the use of self-mitigations measures to reduce the projected emissions by representing the anticipated operating rates and/or fuel usage levels by emission sources covered by the plan is acceptable. Additionally, we have proposed similar changes to the definition of projected emissions as listed in § 550.302(b). Additional revisions are requested to be consistent with the requested revisions to the definitions of <i>projected emissions</i> and <i>facility</i> as discussed in § 550.302(b) below. Finally, consistent with the above proposed change requested in § 550.187(a), we request that the term "designated operator" be used to ensure that it is clear that the designated operator of any OCS facility is the responsible party.	Calculate total projected emissions generated annually by each emissions source on or physically connected to each of the facilities described in your plan that would result from the construction, installation, operation, or decommissioning of the facility . Such calculations should be done for each year that the plan states that the designated operator proposes to engage in operating activities, up to ten years. This calculation should be based on the annual maximum-rated capacity-expected-operations of each emissions source associated with the facility, as the capacity that generates the highest rate of emissions, and the facility's maximum potential projected annual emissions , using the methods and procedures specified under paragraphs (a) and (b) of this section.
	550.205(c)(2)	Calculate the maximum 12-month rolling sum of emissions from each emissions source on or physically connected to each facility and the maximum 12-month rolling sum of emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility. Identify the 12-month period used for this calculation. This should be the 12-month period during which your facility generates the highest amount emissions over the life of your plan.	Requested revisions to be consistent with our comments to § 550.205(c) whereby we request the removal of the 12-month rolling sum and § 550.302(b) whereby we requested changes to the definitions of <i>projected emissions</i> and <i>facility</i> .	Calculate the projected maximum annual calendar-year 12-month rolling sum of emissions from each emissions source on or physically connected to each facility and the maximum 12-month rolling sum of emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility . Identify the calendar year with the maximum annual projected emissions that would result from the construction, installation, operation, or decommissioning of the facility 12-month period used for this calculation. This should be the 12-month period calendar year during which your facility generates the highest amount of emissions over the life of your plan.
	550.205(c)(3)	Calculate the maximum projected peak hourly emissions from each emissions source on or physically connected to each facility and the maximum projected peak hourly emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility.	The requested changes are intended to add further clarity and to be consistent with the requested revisions to the <i>projected emissions</i> and <i>facility</i> definitions as described in § 550.302(b) below.	Calculate the maximum peak hourly projected peak-hourly emissions from each emissions source on or physically connected to each facility and the maximum peak hourly projected peak-hourly emissions from each facility that would result from the construction, installation, operation, or decommissioning of the facility .
	550.205(d)	<i>Attributed emissions.</i> For each criteria and major precursor air pollutant, calculate the attributed projected annual emissions for each of your MSCs, the maximum 12-month rolling sum of each MSC's emissions, and the maximum projected peak hourly emissions for each MSC, using the following procedure:	As discussed in Section 1.2.4 of our comments document BOEM does not have authority to regulate MSCs. As such, we request that this provision be removed from the proposed regulation.	<i>Attributed emissions.</i> For each criteria and major precursor air pollutant, calculate the attributed projected annual emissions for each of your MSCs, the maximum annual calendar-year 12-month rolling sum of each MSC's emissions, and the maximum projected peak hourly emissions for each MSC, using the following procedure:
	550.205(d)(1)	For each facility described in your plan, identify the MSCs that will be used to support that facility. To the extent practicable, identify the other facilities that each MSC will support.	See comments to § 550.205(d) above regarding MSCs. Furthermore, it should be noted that operators can rarely predict which exact vessels will be utilized at the time of plan development. Changes in project schedules, work load (short term contracts), vessels dedicated to a role (i.e., high volume, supplies, etc), and availability of a MSC are a few factors used to determine what vessel will be mobilized at the start of a project. These vessels are potentially not even on contract when a plan is submitted and with around 900 different vessels (work, crew, well evaluation, well stimulation, barges, etc.) supporting different types of operations in the GoM it is impractical for operators to predict every vessel(s) which will be utilized in a plan. Furthermore, BOEM asks that applicants identify the emissions per trip and multiply those emissions by the number of trips per year to identify annual emissions; this is impossible to project because there is no way to anticipate what route a support vessel will take years in advance of the trip. Nor is it practicable for an OCS operator to predict the types of support vessel activities that may be necessary over a 10-year span.	For each facility described in your plan, identify the MSCs that will be used to support that facility. To the extent practicable, identify the other facilities that each MSC will support.

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	550.205(d)(2)	For each MSC referred to in paragraph (d)(1) of this section: (i) An MSC that is intended to remain at sea continuously (i.e., a vessel that does not typically return to port on a regular basis) should be assumed to operate on a 24-hour basis for any day the MSC operates in the waters overlying the OCS or State submerged lands. (ii) For all other MSCs, calculate the emissions per trip, irrespective of what other facilities the MSC may also service on each trip. These emissions include all the emissions generated between the time that the MSC leaves its port or home base until it returns (i.e., support emissions per trip). All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions, if greater, for each emissions source on the MSC.	See comments to § 550.205(d) above regarding MSCs.	For each MSC referred to in paragraph (d)(1) of this section: (i) An MSC that is intended to remain at sea continuously (i.e., a vessel that does not typically return to port on a regular basis) should be assumed to operate on a 24-hour basis for any day the MSC operates in the waters overlying the OCS or State submerged lands. (ii) For all other MSCs, calculate the emissions per trip, irrespective of what other facilities the MSC may also service on each trip. These emissions include all the emissions generated between the time that when the MSC is within 25 miles of the facility leaves its port or home base until it returns (i.e., support emissions per trip). All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions, if greater, for each emissions source on the MSC.
	550.205(d)(3)	Multiply the emissions per trip from paragraph (d)(2) of this section by the number of trips the MSC will make during the 12 month period described in paragraph (c)(2) of this section to get the total support emissions for that MSC. If the MSC will remain at sea continuously, multiply the emissions it will generate per day by the number of days that it will operate in support of your facility during the 12 month period described in paragraph (c)(2) of this section.	See comments to § 550.205(d) above regarding MSCs.	Multiply the emissions per trip from paragraph (d)(2) of this section by the number of trips the MSC will make during the 12-month period described in paragraph (c)(2) of this section to get the total support emissions for that MSC. If the MSC will remain at sea continuously multiply the emissions it will generate per day by the number of days that it will operate in support of your facility during the 12-month period described in paragraph (c)(2) of this section.
	550.205(d)(4)	If the MSC provides support only to your facility, then you must attribute the MSC's total support emissions to that facility.	See comments to § 550.205(d) above regarding MSCs.	If the MSC provides support only to your facility, then you must attribute the MSC's total support emissions to that facility.
	550.205(d)(5)	For each MSC described in paragraph (d)(1) of this section that supports multiple facilities, you may attribute the total support emissions for that MSC to your facility or you may attribute a portion of its total support emissions to your facility (i.e., calculate the attributed emissions for that MSC) using the following procedure: (i) Subtract the emissions you can document that should be reasonably allocated to other facilities from the total support emissions calculated under paragraph (d)(3) of this section for that MSC; or (ii) If it is not practicable to use the method in paragraph (d)(5)(i) of this section, divide the total support emissions calculated under paragraph (d)(3) of this section by the lowest number of facilities that the MSC will service on a typical trip; or (iii) Where it is not practicable to use either paragraph (d)(5)(i) or (ii) of this section, calculate the greater of: (A) The emissions that would be generated by the MSC traveling round-trip between the port or home base and the facility; or (B) The emissions generated by the MSC for the entire time it will operate within 25 statute miles of the facility.	See comments to § 550.205(d) above regarding MSCs.	For each MSC described in paragraph (d)(1) of this section that supports multiple facilities, you may attribute the total support emissions for that MSC to your facility or you may attribute a portion of the total support emissions to your facility (i.e., calculate the attributed emissions for that MSC) using the following procedure: (i) Subtract the emissions you can document that should be reasonably allocated to other facilities from the total support emissions calculated under paragraph (d)(3) of this section for that MSC; or (ii) If it is not practicable to use the method in paragraph (d)(5)(i) of this section, divide the total support emissions calculated under paragraph (d)(3) of this section by the lowest number of facilities that the MSC will service on a typical trip; or (iii) Where it is not practicable to use either paragraph (d)(5)(i) or (ii) of this section, calculate the greater of: (A) The emissions that would be generated by the MSC traveling round-trip between the port or home base and the facility; or (B) The emissions generated by the MSC for the entire time it will operate within 25 statute miles of the facility.
	550.205(d)(6)	Calculate the sum of the emissions estimates that result from the calculation in paragraph (d)(4) or (5) of this section for every MSC identified in paragraph (d)(1) of this section. That sum represents the attributed emissions for your facility.	See comments to § 550.205(d) above regarding MSCs.	Calculate the sum of the emissions estimates that result from the calculation in paragraph (d)(4) or (5) of this section for every MSC identified in paragraph (d)(1) of this section. That sum represents the attributed emissions for your facility.
	550.205(d)(7)	All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions for each of the relevant sources on every MSC.	See comments to § 550.205(d) above regarding MSCs.	All calculations must be based on the maximum rated capacity or the capacity that generates the highest rate of emissions for each of the relevant sources on every MSC.
	550.205(d)(8)	If BOEM questions your determination of the attributed emissions, the Regional Supervisor may require additional documentation to support your findings and may direct you to make changes, as appropriate.	See comments to § 550.205(d) above regarding MSCs.	If BOEM questions your determination of the attributed emissions, the Regional Supervisor may require additional documentation to support your findings and may direct you to make changes, as appropriate.
	550.205(c)	<i>Projected emissions.</i> For every facility described in your plan, you must identify the maximum projected emissions for each criteria and major precursor air pollutant by calculating the annual rate (for each calendar year), the maximum 12-month rolling sum, and the maximum peak hourly rate for your facility emissions under paragraph (c)(2) of this section and your attributed emissions under paragraph (d)(6) of this section.	See comments to § 550.205(c)(1) below.	Projected emissions. For every facility described in your plan, you must identify the maximum projected emissions for each criteria and major precursor air pollutant by calculating the annual rate (for each calendar year), the maximum annual calendar year 12-month rolling sum, and the maximum peak hourly rate for your facility emissions under paragraph (c)(2) of this section and your attributed emissions under paragraph (d)(6) of this section.

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	550.205(c)(1)	If any of your proposed facilities would be located in such a manner as to potentially constitute proximate activities with a pre-existing facility or a facility that was previously approved but not yet constructed, you must identify any such facility in your plan.	As discussed in Section 4 and 5 of our comments the consolidation of proximate activities is better addressed in § 550.303(j). Additionally, see the requested change to the definition of facility contained in § 550.302(b).	If any of your proposed facilities would be located in such a manner as to potentially constitute proximate activities with a pre-existing facility or a facility that was previously approved but not yet constructed, you must identify any such facility in your plan.
	550.205(c)(2)	If you are required to consolidate air emissions from multiple facilities, in accordance with the provisions of § 550.303(d), you must provide the projected emissions information for each facility and provide the complex total emissions for all of the consolidated activities.	See comments to § 550.205(c)(1) above regarding facility consolidation.	If you are required to consolidate air emissions from multiple facilities, in accordance with the provisions of § 550.303(d), you must provide the projected emissions information for each facility and provide the complex total emissions for all of the consolidated activities.
	550.205(f)	Emission reduction measure(s) (ERM). You must provide a description of all proposed ERM, including: the affected emissions source(s); the proposed emissions reduction control technologies, procedures and/or operational limits; the emission control efficiencies; the projected quantity of reductions to be achieved; and any monitoring or monitoring system you propose to use to measure or evaluate the associated emissions. You must be able to demonstrate that all ERM meet the requirements of § 550.309.	The language in this section is duplicative of other sections (§ 550.306, 550.307, and 550.309.) In an effort to stream line the regulatory language, it is requested that this language be changed to reference the relevant sections of the rule.	Emission reduction measure(s) (ERM). You must provide a description of all proposed ERM and associated information required in § 550.306, 550.307, and 550.309, including: the affected emissions source(s); the proposed emissions reduction control technologies, procedures and/or operational limits; the emission control efficiencies; the projected quantity of reductions to be achieved; and any monitoring or monitoring system you propose to use to measure or evaluate the associated emissions. You must be able to demonstrate that all ERM meet the requirements of § 550.309.
	550.205(g)	Modeling information. If you are required to conduct any air quality modeling in support of your plan, then you must provide: (1) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any area(s) of any State(s), including the most affected attainment area(s) and the most affected non-attainment area(s); (2) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any Class I area(s), if relevant; (3) The maximum projected concentrations resulting from the projected emissions for each of your facilities, for each criteria air pollutant and major precursor air pollutant, for the corresponding averaging time(s) (e.g., 1-hour, 3-hour, 8-hour, 24-hour, annual, etc.) specified in the tables in 40 CFR 51.165(b)(2), 40 CFR 52.21(c), and 40 CFR part 50; (4) A list of all inputs, assumptions, and default values used for modeling and justification for each, including the source and justification for the proposed meteorological information; (5) The name and version of the model(s), and whether the model is listed on the USEPA preferred list of models in 40 CFR part 51 appendix W; and (6) A modeling report, including the modeling results. If you have previously provided such a report and/or results of the analysis relevant to paragraphs (e) and (g) of this section to the Regional Supervisor, and the projected emissions are the same as or lower than in the previously submitted report(s) or results, you may instead provide a reference to such report and/or results. (7) For each MSC, provide the distance from each facility described in your plan to the closest relevant home port (for MSCs other than offshore vehicles) or home base (for offshore vehicles), consistent with the maps and information you provide under § 550.224(c) or 550.256(b).	As discussed in Section 1.2 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. BOEM does not have the authority to require compliance with Class I increments or AQRV. Therefore, we request that § 550.205(g)(2) be removed. Furthermore, as discussed previously and in Section 1.2.4 of our comments document, BOEM does not have authority to regulate MSCs. As such, we request that this provision be removed from the proposed regulation.	Modeling information. If you are required to conduct any air quality modeling in support of your plan, then you must provide: (1) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any coastal area(s) of any State(s), including the most affected attainment area(s) with the greatest modeling predicted concentrations and the most affected non-attainment area(s) with the greatest modeling predicted concentrations; (2) Table(s) of the appropriate and relevant maximum projected air pollutant concentrations over any Class I area(s), if relevant; (3) The maximum projected concentrations resulting from the projected emissions for each of your facilities, for each criteria air pollutant and major precursor air pollutant above the EET, for the corresponding averaging time(s) (e.g., 1-hour, 3-hour, 8-hour, 24-hour, annual, etc.) specified in the tables in 40 CFR 51.165(b)(2), 40 CFR 52.21(c), and 40 CFR part 50; (4) A list of all inputs, assumptions, and default values used for modeling and justification for each, including the source and justification for the proposed meteorological information; (5) The name and version of the model(s), and whether the model is referenced in 550.304(a)(1) listed on the USEPA preferred list of models in 40 CFR part 51 appendix W; and (6) A modeling report, including the modeling results. If you have previously provided such a report and/or results of the analysis relevant to paragraphs (e) and (g) of this section to the Regional Supervisor, and the projected emissions are the same as or lower than in the previously submitted report(s) or results, you may instead provide a reference to such report and/or results. (7) For each MSC, provide the distance from each facility described in your plan to the closest relevant home port (for MSCs other than offshore vehicles) or home base (for offshore vehicles), consistent with the maps and information you provide under § 550.224(c) or 550.256(b).
	550.205(h)	Requirements applicable to specific air pollutants	No comments regarding this paragraph.	N/A
	550.205(h)(1)	Nitrogen and Sulphur Oxides (NOx and SOx). Various documents cross-referenced by these regulations, refer to NOx and NO2 (nitrogen dioxide) or SOx and SO2 (sulphur dioxide). Whenever possible, you must utilize data or reasonable estimates for NOx and SOx. At a minimum, your projected emissions of NOx must include emissions of nitrogen oxide and NO2, and your projected emissions of SOx must include emissions of SO2. In the event that data on NOx or SOx emissions are not available, you must instead utilize data on nitrogen oxide plus NO2 as a substitute for NOx, and SO2 emissions as a substitute SOx.	No comments regarding this paragraph.	N/A

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	550.205(h)(2)	<i>Particulate Matter (PM₁₀ and PM_{2.5})</i> . For each emissions source, you must provide data and information on both PM ₁₀ (PM that is 10 micrometers or less in diameter) and PM _{2.5} (PM that is 2.5 micrometers or less in diameter) whenever such information is available and evaluate each type of particulate matter (PM) separately under every applicable standard. All reporting of PM _{2.5} must include the sum of filterable and condensable PM. In the event that data for PM is not separately available for both PM ₁₀ and PM _{2.5} for any given source, you must utilize the PM ₁₀ data for the PM ₁₀ analysis and the same data for the PM _{2.5} analysis. A plan that does not contain separate emission exemption threshold and modeling analysis for each type of PM will not be considered complete.	BOEM's language that specifically addresses that plans that do not contain separate threshold and modeling analysis for each type of PM is unnecessary. § 550.205(c) requires the estimation of projected emission for each criteria pollutant and both PM ₁₀ and PM _{2.5} are separate criteria pollutants. It is requested that this language is removed.	<i>Particulate Matter (PM₁₀ and PM_{2.5})</i> . For each emissions source, you must provide data and information on both PM ₁₀ (PM that is 10 micrometers or less in diameter) and PM _{2.5} (PM that is 2.5 micrometers or less in diameter) whenever such information is available and evaluate each type of particulate matter (PM) separately under every applicable NAAQS standard. All reporting of PM _{2.5} must include the sum of filterable and condensable PM. In the event that data for PM is not separately available for both PM ₁₀ and PM _{2.5} for any given source, you must utilize the PM ₁₀ data for the PM ₁₀ analysis and the same data for the PM _{2.5} analysis. A plan that does not contain separate emission exemption threshold and modeling analysis for each type of PM will not be considered complete.
	550.205(h)(3)	<i>Hydrogen Sulfide (H₂S)</i> . All emissions of SO ₂ that result from the flaring of hydrogen sulfide must be included in the projected emissions of SO ₂ reported and analyzed as part of your plan, in accordance with the USEPA's Oil and Natural Gas Sector New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews. If your projected emissions of H ₂ S will potentially exceed the USEPA's Significant Emission Rate for H ₂ S, as defined in 40 CFR 51.166(b)(2)(i), you must report the nature and extent of these emissions and their likely impact as part of your plan.	There are multiple issues with the proposed language in this subsection. Firstly, USEPA's NESHAP regulation is not relevant in geographical areas where BOEM has air quality jurisdiction, which as mentioned repeatedly through these comments is wholly focused on NAAQS and not HAPs. We request the removal of any references to USEPA NESHAP requirements and pollutants that are not criteria or precursor air pollutants. BOEM should not require the quantification of H ₂ S emissions as part of a plan submittal. With that said, BSEE regulations for H ₂ S would be the pertinent mechanism to quantify H ₂ S emissions; however, BSEE regulation is rightfully focused on facility personnel protection and not necessarily state air quality impacts. Thirdly, the requirements in § 550.205(b) already address the quantification of criteria pollutant emissions for each emission source. The inclusion of language in this subsection to quantify SO ₂ emissions from flaring is unnecessary. In conclusion, we request that § 550.205(h)(3) be removed in its entirety.	<i>Hydrogen Sulfide (H₂S)</i>. All emissions of SO₂ that result from the flaring of hydrogen sulfide must be included in the projected emissions of SO₂ reported and analyzed as part of your plan, in accordance with the USEPA's Oil and Natural Gas Sector New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews. If your projected emissions of H₂S will potentially exceed the USEPA's Significant Emission Rate for H₂S, as defined in 40 CFR 51.166(b)(2)(i), you must report the nature and extent of these emissions and their likely impact as part of your plan.
	550.205(h)(4)	<i>Methane (CH₄)</i> . Unless specifically directed to the contrary by another regulatory provision, the analysis or reporting of CH ₄ emissions is not required.	Methane (CH ₄) is not a criteria pollutant and it is not a precursor pollutant. As mentioned repeatedly throughout these comments, BOEM's air program should be wholly focused on criteria pollutants. We assert that BOEM's discretion to require inclusion of methane emissions in plan submittals is restricted. We request the removal of this subsection in its entirety.	<i>Methane (CH₄)</i>. Unless specifically directed to the contrary by another regulatory provision, the analysis or reporting of CH₄ emissions is not required.
	550.205(h)(5)	<i>Ozone (O₃)</i> . Generally reporting is not required other than in accordance with the provisions of § 550.304(b), unless another regulatory provision specifically addresses O ₃ .	As there are no other provisions of this regulation that specifically address O ₃ , this language should be deleted.	<i>Ozone (O₃)</i>. Generally reporting is not required other than in accordance with the provisions of § 550.304(b), unless another BOEM regulatory provision specifically addresses O₃.
	550.205(h)(6)	<i>Lead (Pb) or Ammonia (NH₃)</i> . Reporting of emissions for these pollutants, for any given source, is required: if there are published manufacturer specifications of emissions factors for these pollutants, or if such information is available from the USEPA or could be obtained or derived from another recognized source, such as utilizing a mass balance approach. If you intend to use a source known to emit a potentially significant amount of Pb or NH ₃ , then you must obtain a reasonable estimate of the associated Pb or NH ₃ emissions. Zero emissions for these pollutants should be assumed in the situation where relevant data are not available and neither you nor BOEM have a reason to anticipate that the emissions could be potentially significant.	There is minimal publicly available information on lead (Pb) or Ammonia (NH ₃) emissions from OCS emission sources. Based on experience with similar sources onshore there is no reason to believe that these emissions from OCS sources are significant. As such, we request that portions of this section be stricken and that zero emissions should be assumed. The proposed language allows BOEM to request this information under the specific situation where the emissions could be potentially significant.	<i>Lead (Pb) or Ammonia (NH₃)</i>. Reporting of emissions for these pollutants, for any given source, is required: if there are published manufacturer specifications of emissions factors for these pollutants; or if such information is available from the USEPA or could be obtained or derived from another recognized source, such as utilizing a mass balance approach. If you intend to use a source known to emit a potentially significant amount of Pb or NH₃, then you must obtain a reasonable estimate of the associated Pb or NH₃ emissions. Zero emissions for these pollutants should be assumed in the situation where relevant data are not available and neither you nor BOEM have a reason to anticipate that the emissions could be potentially significant.
	550.205(i)	<i>Distance calculations—</i> (1) <i>Distance from shore</i> . For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closer of: (i) The nearest mean high water mark of a State, or, on the Pacific coast, the nearest mean higher high water mark; or (ii) The nearest Class I area of any State. (2) <i>Distance from SSB</i> . For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closest point at which the OCS borders any State, at the SSB.	As discussed in Section 1.2.5 of our comments, BOEM does not have the authority to assess emissions impacts at the state seaward boundary. As such, the reference to SSB should be deleted. If BOEM insists on assessing impacts at the SSB, BOEM should publish a table that includes these distances, similar to the current practice for distance to shore. This will ensure that operators and BOEM are considering the same basis for distance. BOEM regulates air quality emissions from oil and gas activity on areas of the OCS in federal waters of the Western and Central Gulf of Mexico and the Arctic. Because BOEM does not have jurisdiction over OCS air emissions in the Pacific coast it is requested that the reference to the Pacific coast be deleted from this provision. Finally, as discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. BOEM does not have the authority to require compliance with Class I increments or AQRV.	<i>Distance calculations—</i> (1) <i>Distance from shore</i>. For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closer of: (i) The nearest mean high water mark of a State, or, on the Pacific coast, the nearest mean higher high water mark; or (ii) The nearest Class I area of any State. (2) <i>Distance from SSB</i>. For each facility described in your plan, you must calculate and provide the distance in statute miles, as measured in a straight line from the site of the facility to the closest point at which the OCS borders any State, at the SSB.

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	550.205(j)	<i>Documentation.</i> You must collect, create, and maintain records or any data or information establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate your projected emissions under this section. The emissions factors you propose to use must be documented, and any relevant certifications, citations, methods, and procedures used to obtain or develop emissions factors must be retained. You must collect and maintain all documentation pertaining to the modeling analysis under § 550.205(g), if applicable, including all references and copies of any referenced materials, as well as any data or information related to any ERM that you propose or implement. You must provide this information, unless the Regional Supervisor waives this requirement for good cause.	As discussed in Section 11.5 of our comments, we request that the language in this provision be revised to identify a period of retention of five years or the life of the plan, whichever is shorter, as well as suggests language that provides the opportunity for BOEM to request this information from the operator.	<i>Documentation.</i> You must collect, create, and maintain records of any data or information establishing, substantiating, and verifying the basis for all information, data, and resources used to calculate your projected emissions under this section. The emissions factors you propose to use must be documented, and any relevant certifications, citations, methods, and procedures used to obtain or develop emissions factors must be retained. You must collect and maintain all documentation pertaining to the modeling analysis under § 550.205(g)-if applicable, including all references and copies of any referenced materials; as well as any data or information related to any ERM that you propose or implement. You must retain provide this information-unless the Regional Supervisor waives this requirement-for good cause-for a period of five years or the life of the plan, whichever is shorter, and supply this information to BOEM upon request.
	550.205(k)	<i>Compliance.</i> You must provide a description of how you will comply with § 550.303 when the emissions generated by your proposed plan activities exceed the respective emission exemption thresholds (EETs), calculated using the formulas in § 550.303(c). If you are subject to the requirement to monitor and report your actual emissions in accordance with § 550.311, then the description you provide must describe how you propose to monitor your emissions.	No comments regarding this paragraph.	N/A
	550.205(l)	<i>Reporting.</i> You must submit data and information in a format, and using the forms, as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method authorized by BOEM.	The requested changes are proposed to increase clarity.	<i>Reporting.</i> You must submit data and information in a standard format, and using the forms, as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method as specified-authorized by BOEM.
	550.205(m)	<i>Additional information.</i> (1) If you are required to conduct modeling, and if, under § 550.305 your projected emissions would cause an increase in the concentration of any pollutant that is within 95% of any Significant Impact Level (SIL), then you must: report the amount of emissions from aircraft or onshore support facilities as attributed emissions; and combine the impacts of aircraft and onshore support facilities emissions with the impacts of your projected emissions for the purposes of this section and for your analysis under subpart C of this part. The aircraft and support facilities for which you are required to report emissions are those described in §§ 550.224, 550.225, 550.257, and 550.258. If required to report your aircraft or onshore support facilities and those aircraft or onshore support facilities support multiple OCS facilities then you must allocate their emissions in an appropriate manner similar to that described for MSCs in § 550.205(d). (2) The Regional Supervisor may require such additional data or information related to these sources as is necessary to demonstrate your plan's compliance with subpart C of this part, and/or applicable federal laws related to the protection of air quality within BOEM jurisdiction.	As explained in Section 12.5 of our comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations. We request that this entire subsection be eliminated.	<i>Additional information:</i> (1)-If you are required to conduct modeling, and if, under § 550.305 your projected emissions would cause an increase in the concentration of any pollutant that is within 95% of any Significant Impact Level (SIL), then you must: report the amount of emissions from aircraft or onshore support facilities as attributed emissions; and combine the impacts of aircraft and onshore support facilities emissions with the impacts of your projected emissions for the purposes of this section and for your analysis under subpart C of this part-The aircraft and support facilities for which you are required to report emissions are those described in §§ 550.224, 550.225, 550.257, and 550.258. If required to report your aircraft or onshore support facilities and those aircraft or onshore support facilities support multiple OCS facilities then you must allocate their emissions in an appropriate manner similar to that described for MSCs in § 550.205(d); (2)-The Regional Supervisor may require such additional data or information related to these sources as is necessary to demonstrate your plan's compliance with subpart C of this part; and/or applicable federal laws related to the protection of air quality within BOEM jurisdiction.
	550.205(n)	<i>Requirements for plans to be deemed submitted.</i> Your plan will not be deemed submitted in accordance with the requirements of § 550.231 or § 550.266 until: (1) All of the requirements of this section have been completed; (2) You have completed the Ambient Air Increment (AAI) analysis, including the required BOEM forms, the modeling protocol, and the modeling results, as specified in § 550.307(b) if required; and (3) You have completed any other analysis required by subpart C of this part.	This subsection contains language under § 550.205(n)(2) that is unnecessary as it is already captured in § 550.205(n)(3). Therefore, it is requested that § 550.205(n)(2) be deleted from the regulation. Additionally, § 550.205(n)(2) presents a largely unworkable situation that will delay the plan approval process. Specifically, because § 550.304(a)(2) requires an operator to submit the modelling protocol before you conduct modeling, the modeling information required by § 550.205(n) could not be submitted in the initial version of any plan. Such information could only be submitted after BOEM approves the modeling protocol. Therefore, it is requested that BOEM establish a timeline for completing its review. A 15-day limit to review and to approve or deny the protocol should be added to § 550.205(g) or § 550.304(a)(2).	<i>Requirements for plans to be deemed submitted.</i> Your plan will not be deemed submitted in accordance with the requirements of § 550.231 or § 550.266 until: (1) All of the requirements of this section have been completed; (2)-You have completed the Ambient Air Increment (AAI) analysis, including the required BOEM forms, the modeling protocol, and the modeling results, as specified in § 550.307(b) if required; and (3) You have completed any other analysis required by subpart C of this part.
	550.205(o)	<i>Plans exempt from review under the AQRP.</i> If you can demonstrate that your facility will not generate projected emissions of any criteria or precursor air pollutant in an amount greater than the corresponding significant emissions rate limit described in the "Pollutant and Emissions Rate" table defined in 40 CFR 52.211(b)(23)(i), your plan is exempt from the AQRP	As discussed in Section 2.2, the use of onshore stationary source PSD significance thresholds in 40 CFR 52.211(b)(23)(i) are not appropriate for OCS regulations. As such, it is proposed that the regulatory language be updated to reflect the more appropriate EET values.	<i>Plans exempt from review under the AQRP.</i> If you can demonstrate that your facility will not generate projected emissions of any criteria or precursor air pollutant in an amount greater than the corresponding EET significant emissions rate limit described in the "Pollutant and Emissions Rate" table defined in 40 CFR 52.211(b)(23)(i)-your plan is exempt from the AQRP requirements of this section and subpart C of this part.

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		requirements of this section and subpart C of this part.		
What must the EP include?	550.211(c)	<i>Drilling unit.</i> (1) A description of the drilling unit and associated equipment you will use to conduct your proposed exploration activities, including a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels, oil, and lubricants that will be stored on the facility. (2) For purposes of this section, the term "facility" means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations	There is no need to add the definition of facility in this provision since this is already defined in § 550.302(b).	<i>Drilling unit.</i> (1) A description of the drilling unit and associated equipment you will use to conduct your proposed exploration activities, including a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels, oil, and lubricants that will be stored on the facility. (2) For purposes of this section, the term "facility" means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations.
What information must accompany the EP?	550.212(f)	Air emissions information required by § 550.205	No comments regarding this paragraph.	N/A
What hydrogen sulfide (H ₂ S) information must accompany the EP?	550.215(d)	(2) If any H ₂ S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.	As explained in Section 1.2.3 of our comments, BOEM's mandate under OCSLA is to ensure that OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. Since H ₂ S does not have a NAAQS BOEM does not have authority to regulate this pollutant. As such, this text should be removed.	(2) If any H ₂ S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.
	550.215(c)	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of H ₂ S, you must separately identify this activity in your plan and separately identify the resulting emissions of sulphur oxides (SO _x) as part of your projected emissions under § 550.205(e).	See comments to § 550.215(d) above. Furthermore, this subsection is unnecessary. Emissions from flaring will already be accounted for in the information required by § 550.205(b). We request the subsection be eliminated.	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of H ₂ S, you must separately identify this activity in your plan and separately identify the resulting emissions of sulphur oxides (SO _x) as part of your projected emissions under § 550.205(e).
	550.218	Removed	No comments regarding this paragraph.	N/A
What information on support vessels, offshore vehicles, and aircraft you will use must accompany the EP?	550.224(a)	<i>General.</i> A description of the MSCs and aircraft you will use to support your exploration activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to your facility or facilities.	As discussed previously, at the time a plan is submitted operators will know the type of vessel(s) needed for a project but can rarely predict which exact vessels and aircraft will be utilized. As such, we request that the proposed changes be incorporated into this provision to better reflect available information at the time of plan submittal.	<i>General.</i> A description of type(s) (i.e., support vessel, stimulation vessel, construction vessel, etc.) of the MSCs and aircraft you will use to support your exploration activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to your facility or facilities.
	550.224(b)	<i>Air emissions.</i> See § 550.205.	As explained in Section 1.2.5 of our comments, BOEM does not have authority to regulate onshore support facilities, offshore vehicles, and aircraft emissions. Therefore, this provision should be deleted from the regulation.	<i>Air emissions.</i> See § 550.205.
What information on the onshore support facilities you will use must accompany the EP?	550.225(b)	<i>Air emissions.</i> A description of the emissions source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(n), the amount of air pollutants emitted need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted under the CAA or if you can identify another agency to which this emissions information from the facility was submitted.	As explained in Section 1.2.5 of our comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations.	<i>Air emissions.</i> A description of the emissions source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(n), the amount of air pollutants emitted need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted regulated under the CAA or if you can identify another agency to which this emissions information from the facility was submitted.
What must the DPP or DOCD include?	550.241(c)	<i>Drilling unit.</i> A description of the drilling unit and associated equipment you will use to conduct your proposed development drilling activities. Include a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations.	See § 550.211(c) above.	<i>Drilling unit.</i> A description of the drilling unit and associated equipment you will use to conduct your proposed development drilling activities. Include a brief description of its important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means any installation, structure, vessel, vehicle, equipment or device that is temporarily or permanently attached to the seabed of the OCS, including an artificial island used for drilling, well completion, well-workover, or other operations.

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	550.241(d)	<i>Production facilities.</i> A description of the production platforms, satellite structures, subsea wellheads and manifolds, lease term pipelines (see definition at § 550.105), production facilities, umbilicals, and other facilities you will use to conduct your proposed development and production activities. Include a brief description of their important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means a vessel, a structure, or an artificial island used for drilling, well completion, well-workover, or other operations or used to support production facilities.	See § 550.211(c) above.	<i>Production facilities.</i> A description of the production platforms, satellite structures, subsea wellheads and manifolds, lease term pipelines (see definition at § 550.105), production facilities, umbilicals, and other facilities you will use to conduct your proposed development and production activities. Include a brief description of their important safety and pollution prevention features, and a table indicating the type and the estimated maximum quantity of fuels and oil that will be stored on the facility. For the purpose of this section, the term facility means a vessel, a structure, or an artificial island used for drilling, well completion, well-workover, or other operations or used to support production facilities.
What information must accompany the DPP or DOCD?	550.242(g)	Air emissions information required by § 550.205	No comments regarding this paragraph.	
What hydrogen sulfide (H₂S) information must accompany the DPP or DOCD?	550.245(d)	(3) If any H ₂ S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.	See comments to § 550.215(d) above.	(3) If any H₂S emissions are projected to affect any location within a State in a concentration greater than 10 parts per million, the modeling analysis must be consistent with the USEPA risk management plan methodologies outlined in 40 CFR part 68.
	550.245(e)	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of hydrogen sulfide, you must separately identify this activity in your plan and separately identify the resulting emissions of SO _x , including reporting the sulphur emissions under § 550.205(e).	This subsection is unnecessary. Emissions from flaring will already be accounted for in the information required by 550.205(b). We request this subsection be eliminated.	<i>Hydrogen sulfide.</i> If you propose to flare any gasses containing a potentially significant amount of hydrogen sulfide, you must separately identify this activity in your plan and separately identify the resulting emissions of SO_x, including reporting the sulphur emissions under § 550.205(e).
	550.249	Removed	N/A	N/A
What information on the support vessels, offshore vehicles, and aircraft you will use must accompany the DPP or DOCD?	550.257(a)	<i>General.</i> A description of the MSCs and aircraft you will use to support your activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to the facilities you will use to conduct your proposed development and production activities.	See comments on § 550.224(a) above.	<i>General.</i> A description of type(s) (i.e., support vessel, stimulation vessel, construction vessel, etc.) of the MSCs and aircraft you will use to support your activities. The description of MSCs must estimate the storage capacity of their fuel tanks and the frequency of their visits to the facilities you will use to conduct your proposed development and production activities.
	550.257(b)	<i>Air emissions.</i> See § 550.205.	See comments on § 550.224(b) above.	<i>Air emissions.</i> See § 550.205.
What information on the onshore support facilities you will use must accompany the DPP or DOCD?	550.258(b)	<i>Air emissions.</i> A description of the source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(m), the amount of emissions of air pollutants need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted under the CAA or if you can identify another agency to which emissions from the facility was submitted.	See comments to § 550.225(b) above.	<i>Air emissions.</i> A description of the source, the frequency and duration of its operation, and the types of air pollutants likely to be emitted by the onshore support facilities you will use. Except as required under § 550.205(m), the amount of emissions of air pollutants need not be reported. You do not need to report this information for any onshore support facility if the facility is permitted under the CAA or if you can identify another agency to which emissions from the facility was submitted.

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How must I conduct activities under the approved EP, DPP, DOCD, RUE, pipeline ROW, or lease term pipeline application?	550.280(a)	<i>Compliance.</i> You must conduct all of your lease and unit activities according to your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application, and any approval conditions. You may not install or use any facility, equipment, vessel, vehicle, or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application, and you may not install or use a substitute for any emissions source described in your EP, DPP, DOCD, or RUE, pipeline ROW, lease term pipeline application, without BOEM prior approval. If you fail to comply with your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application:	It should be noted that this language conflicts with other sections of the proposed rule, namely § 550.303(g)(4) and our understanding of BOEM's intent. We suggest language changes that make this section consistent with § 550.303(g)(4) and BOEM current practices. If BOEM were to reject the suggested changes, an operator may be forced to submit a plan with multiple "Operating Scenarios" to ensure that the approved plan includes "all any facility, equipment, vessel, vehicle or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application." A plan with multiple operating scenarios will prove to be administratively burdensome to BOEM and to the operator.	<i>Compliance.</i> You must conduct all of your lease and unit activities according to your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application, and any approval conditions. You may not install or use any facility, equipment, vessel, vehicle, or other emissions source not described in your EP, DPP, DOCD, or RUE, pipeline ROW or lease term pipeline application, and you may not install or use a substitute for any emissions source described in your EP, DPP, DOCD, or RUE, pipeline ROW, lease term pipeline application, without BOEM prior approval if doing so will result in an increase in maximum annual projected emissions, unless the proposed activity is determined to be an insignificant activity. If you fail to comply with your approved EP, DPP, DOCD, or RUE, pipeline ROW, or lease term pipeline application:
How will BOEM require revisions to the approved EP, DPP, DOCD or application for a RUE?	550.284(a)	<i>Periodic review.</i> The Regional Supervisor will periodically review the activities you conduct under your approved EP, DPP, DOCD, or RUE application and may require you to submit updated information on your activities. The frequency and extent of this review will be based on the significance of any changes in available information, applicable law or regulation, or onshore or offshore conditions affecting, or affected by, the activities in your approved EP, DPP, DOCD, or RUE application. (1) After 2020, any EP, DPP, DOCD or RUE application that was approved more than ten years prior must be resubmitted for air quality review in accordance with the requirements of § 550.310.	As discussed in Sections 1.2.2 and 10 of our comments, BOEM lacks the authority to require re-submission or revision of an already-approved plan, absent some indication of changed conditions or impacts. Our requested changes to this provision make this regulatory provision consistent with BOEM's authority.	<i>Periodic review.</i> The Regional Supervisor will periodically review the activities you conduct under your approved EP, DPP, DOCD, or RUE application and may require you to submit updated information on your activities. The frequency and extent of this review will be based on the significance of any changes in available information, applicable law or regulation, or onshore or offshore conditions affecting, or affected by, the activities in your approved EP, DPP, DOCD, or RUE application. (1) After 2020, any EP, DPP, DOCD or RUE application that was approved more than ten years prior must be resubmitted for air quality review in accordance with the requirements of § 550.310.
Subpart C – Air Quality Analysis, Control, and Compliance				
Under what circumstances does this subpart apply to operations in my plan?	550.301	The provisions of this subpart apply to any existing facility or proposed plan involving a facility or facilities operating on, or proposed to operate on, any area of the OCS where the Secretary of the Interior has authority to regulate air emissions pursuant to section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. 1334(a)(8), as amended, and jurisdiction pursuant to section 328(b) of the CAA, 42 U.S.C. 7627(b), as amended, including OCS operations conducted pursuant to any plan approved under this part.	See comments in § 550.284(a) regarding BOEM's authority to require re-submission or revision of an already-approved plan.	The provisions of this subpart apply to any existing facility plan deemed submitted after the effective date of the final regulation or proposed plan involving a facility or facilities operating on, or proposed to operate on, any area of the OCS where the Secretary of the Interior has authority to regulate air emissions pursuant to section 5(a)(8) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. 1334(a)(8), as amended, and retains jurisdiction pursuant to section 328(b) of the CAA, 42 U.S.C. 7627(b), as amended, including OCS operations conducted pursuant to any plan approved under this part.
Acronyms and definitions concerning air quality.	550.302(a)	Acronyms and terms used in this subpart, and in § 550.205, have the following meanings: AAI means ambient air increment(s). AAQSB means ambient air quality standards and benchmarks. AEDT means aviation environmental design tool. APD means application for a permit to drill. AQCR means air quality control region. BACT means best available control technology. BLM means the Bureau of Land Management. Btu IT means British Thermal Unit International Tables. CAA means the Clean Air Act. CEO means Chief Environmental Officer (BOEM) CH4 means methane. CO means carbon monoxide. CP means criteria pollutant. CSU means column-stabilized-units. DOCD means development operations coordination document. DOI means the U.S. Department of the Interior. DPP means development and production plan.	No comments regarding the acronym list.	N/A

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		<p>ECE means emission control efficiency. EET means emission exemption threshold(s). EIS means environmental impact statement. EP means exploration plan. ERM means emission reductions measure(s). FAA means Federal Aviation Administration. FLM means Federal Land Manager, which includes the heads of the U.S. Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), National Park Service (NPS), Bureau of Land Management (BLM) in DOI and U.S. Forest Service in the Department of Agriculture. FPS means floating production systems. FPSO means floating production storage and offloading vessel. G&G means geological and geophysical. GHG means greenhouse gas. hp means horsepower. hpm means mechanical horsepower. HPU means hydraulic power unit. H₂S means hydrogen sulfide.</p>	<p>No comments regarding the acronym list.</p>	<p>N/A</p>
		<p>kW means kilowatt. MARPOL means Marine Pollution Convention. MODU means mobile offshore drilling unit. MOVES means motor vehicle emission simulator. MSC means mobile support craft NAAQS means the primary or secondary national ambient air quality standards. NARA means National Archives and Records Administration. NH₃ means ammonia. NO₂ means nitrogen dioxide. NO_x means nitrogen oxides. O₃ means ozone. OCS means Outer Continental Shelf. OCSLA means Outer Continental Shelf Lands Act. ONRR means the Office of Natural Resources Revenue OSFR means oil spill financial responsibility. OSV means offshore supply vessel.</p>	<p>No comments regarding the acronym list.</p>	<p>N/A</p>
		<p>Pb means lead. PM means particulate matter. PM_{2.5} means fine particulate matter equal to or less than 2.5 micrometers in diameter. PM₁₀ means particulate matter equal to or less than 10 micrometers in diameter. PTE means potential to emit. ROW means rights-of-way. Rpm means revolutions per minute. RUE means right-of-use and easement. SILs means significant impact levels. SO₂ means sulphur dioxide. SO_x means sulphur oxides. SSB means State seaward boundary TAS means treatment as State. TIP means tribal implementation plan. TLP means tension-leg platforms. VOC means volatile organic compound. U.S. means the United States. USEPA means the United States Environmental Protection Agency. µg/m³ means micrograms per cubic meter.</p>	<p>No comments regarding the acronym list.</p>	<p>N/A</p>
	550.302(b)	<p>Terms used in this subpart have the following meanings:</p>	<p>No comments regarding this definition.</p>	<p>N/A</p>

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		N/A	As discussed in Section 9 of our comments, BOEM has not clearly defined when OCS emissions "affect the air quality of any State." In Section 9 of our comments, we identify appropriate definitions.	<u>New Proposed Definition</u> <i>Affect the air quality of any State</i> means the following: (1) The air quality of any State coastal attainment area is considered to be affected by an OCS source when emissions from that source result in a model-predicted onshore concentration that exceeds the SIL and the modelled concentration plus background concentration exceeds the NAAQS. (2) The air quality of any State coastal nonattainment area is considered to be affected by an OCS source when a model-predicted onshore concentration attributable to emissions from the OCS source exceeds a SIL.
		<i>Air quality control region (AQCR)</i> means an interstate area or major intrastate area, which the USEPA deems appropriate for assessing the regional attainment and maintenance of the primary or secondary national ambient air quality standards described in 42 U.S.C. 7409, as provided under 40 CFR part 81, subpart B, Designation of Air Quality Control Regions.	No comments regarding this definition.	N/A
		<i>Ambient Air Increments (AAIs)</i> means the national benchmarks for Ambient Air Increments set out in the table in 40 CFR 52.21(c), as amended, or in 42 U.S.C. 7473 et seq., as amended.	As discussed in Section 2.2 of our comments, BOEM's use of the AAIs is not appropriate for OCS sources. Therefore, we request that this definition be deleted.	<i>Ambient Air Increments (AAIs)</i> means the national benchmarks for Ambient Air Increments set out in the table in 40 CFR 52.21(c), as amended, or in 42 U.S.C. 7473 et seq., as amended.
		<i>Ambient air quality standards and benchmarks (AAQSB)</i> means any or all of the national ambient air quality standards and benchmarks referenced in this subpart, including the primary and secondary NAAQS defined in 40 CFR part 50; the SILs, in 40 CFR 51.165(b)(2); the AAIs, as set out in the table in 40 CFR 52.21(c).	We do not believe a "catch all" phrase such as AAQSB is warranted. As discussed in Section 2.2, it is not appropriate that BOEM's proposed rule address PSD increments (i.e., AAIs). The rule should be precise and refer explicitly to NAAQS and SILs, as appropriate. Therefore, we request that the definition of AAQSB be removed from the definitions.	<i>Ambient air quality standards and benchmarks (AAQSB)</i> means any or all of the national ambient air quality standards and benchmarks referenced in this subpart, including the primary and secondary NAAQS defined in 40 CFR part 50; the SILs, in 40 CFR 51.165(b)(2); the AAIs, as set out in the table in 40 CFR 52.21(c).
		<i>Attainment area</i> means, for any given criteria air pollutant, a geographic area, which is not designated by the USEPA as being a designated non-attainment area, as codified at 40 CFR part 81 subpart C (40 CFR 81.300 through 81.356). This includes areas that are referred to as attainment, maintenance, unclassifiable, or unclassifiable/attainment in that subpart, as well as areas that have not yet been designated because the two-year period to complete such designations after revision of a NAAQS has not yet passed.	No comments regarding this definition.	N/A
		<i>Attributed emissions</i> means, for any given criteria or precursor air pollutant, the emissions from MSC and, if appropriate, aircraft, operating above the OCS or State submerged lands, that are attributed to a facility pursuant to the methodology set forth in § 550.205(d) for the period over which the corresponding facility emissions are measured.	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that this definition be eliminated.	<i>Attributed emissions</i> means, for any given criteria or precursor air pollutant, the emissions from MSC and, if appropriate, aircraft, operating above the OCS or State submerged lands, that are attributed to a facility pursuant to the methodology set forth in § 550.205(d) for the period over which the corresponding facility emissions are measured.
		<i>Background concentration</i> means the ambient air concentration of any given criteria air pollutant that arises both from local natural processes and from the transport into the airshed of natural or anthropogenic pollutants originating locally or from another location, either as measured from an USEPA-approved air monitoring system or as determined on some other appropriate scientifically justified basis approved by BOEM.	We request minor revisions to this definition to allow input from the designated operator in establishing a basis for the background concentration.	<i>Background concentration</i> means the ambient air concentration of any given criteria air pollutant that arises both from local natural processes and from the transport into the airshed of natural or anthropogenic pollutants originating locally or from another location, either as measured from an BOEM or USEPA-approved air monitoring system or as determined on some other appropriate scientifically justified basis proposed by the designated operator in the plan submittal and approved by BOEM.
		<i>Baseline concentration</i> means the ambient background concentration of any given air pollutant that exists or existed at the time of the first application for a USEPA Prevention of Significant Deterioration (PSD) permit in an area subject to section 169 of the CAA, based on air quality data available to the USEPA or a State air pollution control agency and on the monitoring data provided in the permit application and as defined in 40 CFR 51.166(b)(13). The baseline concentration is distinguished from the background concentration in that the background concentration changes continually over time to reflect the current ambient air concentration for any given air pollutant, whereas the baseline concentration remains fixed until such time as a new AAI is established for an attainment area.	This definition is not required because it is relevant only to determining increment (AAI) consumption. As discussed in Section 2.2, it is not appropriate that BOEM's proposed rule address PSD increments (i.e., AAIs).	<i>Baseline concentration</i> means the ambient background concentration of any given air pollutant that exists or existed at the time of the first application for a USEPA Prevention of Significant Deterioration (PSD) permit in an area subject to section 169 of the CAA, based on air quality data available to the USEPA or a State air pollution control agency and on the monitoring data provided in the permit application and as defined in 40 CFR 51.166(b)(13). The baseline concentration is distinguished from the background concentration in that the background concentration changes continually over time to reflect the current ambient air concentration for any given air pollutant, whereas the baseline concentration remains fixed until such time as a new AAI is established for an attainment area.

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		Best Available Control Technology (BACT) means a physical or mechanical system or device that reduces emissions of air pollutants subject to regulation to the maximum extent practicable, taking into account: the amount of emissions reductions necessary to meet specific regulatory provisions; energy, environmental, and economic impacts; and costs.	As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Finally, we request the addition of language ensuring that the review considers safe operations of all OCS facilities as provided in § 550.307(c)(4).	<i>Best Available Control Technology (BACT)</i> means physical or mechanical system or device that reduces emissions of criteria air pollutants subject to regulation to the maximum extent practicable, taking into account: the amount of emissions reductions necessary to meet specific regulatory provisions; energy, environmental, and economic impacts; and costs. If the implementation of BACT under these regulations would compromise the safety of the operation of the facility, and such implementation of any air quality standards or benchmarks cannot be otherwise addressed, then BOEM may waive the requirement to apply BACT.
		<i>Class I area</i> means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, where visibility and air emissions are protected by a FLM pursuant to 42 U.S.C. 7472(a) or 7474, as amended; Class I areas include certain national parks, wilderness areas, national monuments, and areas of special national or regional natural, recreational, scenic, or historic value.	As discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's mandate under OCSLA is to ensure that the OCSLA authorized activities do not significantly affect onshore air quality relevant to NAAQS. BOEM does not have the authority to require compliance with Class I increments or AQRV.	<i>Class I area</i> means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, where visibility and air emissions are protected by a FLM pursuant to 42 U.S.C. 7472(a) or 7474, as amended; Class I areas include certain national parks, wilderness areas, national monuments, and areas of special national or regional natural, recreational, scenic, or historic value.
		<i>Class II area</i> means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, that is protected pursuant to 42 U.S.C. 7472(a) or 7474, as amended, to limits less stringent than those for Class I areas. Sensitive Class II areas represent a sub-classification of Class II areas that are defined by Federal Land Management Agencies as federal lands where the protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or by policy.	As discussed in Section 2.2 of our comments, BOEM's use of the EPA term <i>Class II area</i> is not appropriate for OCS sources. Compliance with the NAAQS is required at all areas onshore. Therefore, we request that this definition be deleted.	<i>Class II area</i> means an area designated by the USEPA, a State, or a Federally-recognized Indian tribe, that is protected pursuant to 42 U.S.C. 7472(a) or 7474, as amended, to limits less stringent than those for Class I areas. Sensitive Class II areas represent a sub-classification of Class II areas that are defined by Federal Land Management Agencies as federal lands where the protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or by policy.
		<i>Complex total emissions</i> means the sum of the facility emissions that would result from all of the facilities that have been aggregated for the purposes of evaluating their potential consolidated impact on air quality, pursuant to the methodology set forth in § 550.303(d), and the sum of all corresponding attributed emissions for those facilities.	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the definition of <i>Complex total emissions</i> be deleted.	<i>Complex total emissions</i> means the sum of the facility emissions that would result from all of the facilities that have been aggregated for the purposes of evaluating their potential consolidated impact on air quality, pursuant to the methodology set forth in § 550.303(d), and the sum of all corresponding attributed emissions for those facilities.
		N/A	As discussed in Section 8.9 we are proposing a new definition for the term <i>coastal area of any state</i> .	<u>Newly Proposed Definition</u> <i>Coastal area of any State</i> means the inland area up to 25 miles of the shoreline where the shoreline refers to the nearest mean high water mark of a State. A lesser distance may be acceptable if the modeling analysis demonstrates that maximum concentrations occur closer to the shoreline.
		<i>Criteria air pollutant or criteria pollutant</i> means any one of the principal pollutants for which the USEPA has established and maintains a NAAQS under 40 CFR part 50 in accordance with 42 U.S.C. 7409, as amended, for the protection of public health and welfare, and the environment. The USEPA has established primary standards for the protection of sensitive populations of children and the elderly and secondary standards for the protection of crops, vegetation, buildings, visibility, and prevention of harm to animals. Criteria air pollutants do not include Volatile Organic Compounds (VOCs) or any other precursor air pollutant not already regulated under the NAAQS.	No comments regarding this definition.	N/A
		<i>Design concentration</i> means the pollutant concentration at a given location projected, through computer-simulated air dispersion or photochemical modeling, as described under 40 CFR part 51, appendix W, section 7.2.1.1 to result from your projected emissions, combined with the background concentration for the same pollutant, averaging time, and statistical form at the most appropriate receptor location. The appropriate background concentration is measured from the nearest point at which there is data from a USEPA-approved air monitoring system, or as determined on some other appropriate scientifically justified basis approved by BOEM.	We request that the referenced section in this definition be corrected to section 7.2.1. Furthermore, we request the removal of the background concentration language from this definition because it is already defined in § 550.303(b) and is unnecessary.	<i>Design concentration</i> means the pollutant concentration at a given location projected, through computer-simulated air dispersion or photochemical modelling, as described under 40 CFR part 51, appendix W, section 7.2.1.1 to result from your projected emissions, combined with the background concentration for the same pollutant, averaging time, and statistical form at the most appropriate receptor location. The appropriate background concentration is measured from the nearest point at which there is data from a USEPA-approved air monitoring system, or as determined on some other appropriate scientifically justified basis approved by BOEM.
		<i>Dispersion modeling</i> means the mathematical computer simulation of air emissions being transported from a source through the atmosphere under given meteorological conditions. Emissions from sources, expressed as the rate of air pollutants emitted over time (i.e., pounds per hour), are translated through computer modeling into pollutant concentrations, expressed in units of micrograms of pollutants per cubic meter of ambient air (µg/m ³), or in parts per million or billion, depending on the circumstances. When a file containing meteorological and emissions data are input into the computer model, the model will	No comments regarding this definition.	N/A

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		project the concentrations of the pollutants at a receptor location.		
		<i>Emission control efficiency (ECE)</i> means the effectiveness of an ERM for any given emissions source and air pollutant. The greater the emission control efficiency, the greater the effectiveness of the underlying controls (i.e., measured as a percentage reduction in the underlying emissions of any given pollutant). ECE varies from 100%, representing a control that completely eliminates emissions, to zero, representing a control that has no effect on such emissions.	The proposed regulatory text does not specify the averaging period for determining ECE and it is suggested that an annual averaging period be utilized. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Finally, given the nature of operational limitations and/or equipment replacements, the estimation of an ECE is not practical or useful; therefore, we request that ECEs be used only for sources implementing BACT control requirements.	<i>Emission control efficiency (ECE)</i> means the effectiveness of an ERM, excluding emission credits for any given emissions source and criteria air pollutant. The greater the emission control efficiency, the greater the effectiveness of the underlying controls (i.e., measured as a percentage reduction in the underlying annual emissions of any given pollutant). ECE varies from 100%, representing a control that completely eliminates emissions, to zero, representing a control that has no effect on such emissions.
		<i>Emissions credits</i> mean emissions reductions from an emissions source(s) not associated with the plan that are intended to compensate for the excessive emissions of criteria or precursor air pollutants, regardless of whether these emissions credits are acquired from an emissions source(s) located either offshore or onshore, including: emissions offsets generated by the lessee or operator itself; or emissions offsets acquired from a third party; or trading allowances or other alternative emission reduction method(s) or system(s) associated with a market-based trading mechanism; examples include mitigation banks or other competitive markets where these assets are exchanged.	In concept, this emissions credit provision provides benefit to the OCS operators. However, because BOEM has not established any specific emission credit regulatory requirements and states do not generally have banking systems for areas designated as attainment, the usefulness of the emissions credit program is significantly limited and would be burdensome to implement solely on a case-by-case basis. See Section 7.1 of our comments for additional information.	<i>Emissions credits</i> mean emissions reductions from an emissions source(s) not associated with the plan that are intended to compensate for the excessive emissions of criteria or precursor air pollutants, regardless of whether these emissions credits are acquired from an emissions source(s) located either offshore or onshore, including: emissions offsets generated by the lessee or designated operator itself; or emissions offsets acquired from a third party; or trading allowances or other alternative emission reduction method(s) or system(s) associated with a market-based trading mechanism; examples include mitigation banks or other competitive markets where these assets are exchanged.
		<i>Emission exemption thresholds (EET)</i> means the maximum allowable rate of projected emissions, calculated for each air pollutant, expressed as short tons per year (tpy), above which facilities would be subject to the requirement to perform modeling.	We request minor changes to the definition of EET to improve clarity of the rule requirements. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants	<i>Emission exemption thresholds (EET)</i> means the maximum allowable rate of projected emissions, calculated pursuant to the requirements of § 550.303(c) for each criteria air pollutant, expressed as short tons per year (tpy), above which facilities would be subject to the requirements of § 550.304 to perform modeling.
		<i>Emissions factor(s)</i> means a value that relates the quantity of a specific pollutant released into the atmosphere with the operation of a particular emissions source. Emissions factors are usually expressed as the mass of pollutant generated from each unit (e.g., mass, volume, distance, work, or duration) of activity by the emissions source emitting the pollutant.	No comments regarding this definition.	N/A
		<i>Emission reduction measure(s)</i> (ERM) means any operational control(s), equipment replacement(s), BACT, or emissions credit(s), applied on either a temporary or permanent basis, to reduce the amount of emissions of criteria or precursor air pollutants that would occur in the absence of such measures.	The following change is proposed to clarify that replacement could include the substitution of other equipment in place of the primary emission source.	<i>Emission reduction measure(s)</i> (ERM) means any operational control(s), equipment replacement(s) or substitution(s), BACT, or emissions credit(s), applied on either a temporary or permanent basis, to reduce the amount of emissions of criteria or precursor air pollutants that would occur in the absence of such measures.
		<i>Existing facility</i> means an operational OCS facility described in an approved plan.	No comments regarding this definition.	N/A

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		<p><i>Facility</i> means, any installation, structure, vessel, vehicle, equipment, or device that is temporarily or permanently attached to the seabed of the OCS, including but not limited to a dynamically positioned ship, gravity-based structure, mammade island, or bottom-sitting structure, whether used for the exploration, development, production or transportation of oil, gas, or sulphur. All installations, structures, vessels, vehicles, equipment, or devices directly associated with the construction, installation, and implementation of a facility are part of a facility while located at the same site, attached, or interconnected by one or more bridges or walkways, or while dependent on, or affecting the processes of, the facility, including any ROV attached to the facility. One facility may include multiple derrick rigs, drilling units, vessels, platforms, installations, devices, and pieces of equipment. Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the "tender assist" mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels. Facilities also include all Floating Production Systems (FPS), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.</p>	<p>As discussed in Section 5 of our comments, we request that BOEM incorporated the proposed revisions to the definition of <i>Facility</i>. It is also requested that BOEM incorporate portions of the previous regulatory language contained at § 550.303(j) of BOEM's current regulation. See proposed new language in § 550.303(i) below.</p>	<p><i>Facility</i> means, any installation, structure, vessel, vehicle, equipment, or device that is temporarily or permanently attached to the seabed of the OCS for the purpose of exploring for, developing, or producing oil or gas or sulphur therefrom, and which emits a regulated criteria or precursor pollutant, including but not limited to a dynamically positioned ship, gravity-based structure, mammade island, or bottom-sitting structure, whether used for the exploration, development, production or transportation of oil, gas, or sulphur. All installations, structures, vessels, vehicles equipment, or devices directly associated with the construction, installation, and implementation of a facility are a part of a facility only while located at the same site, attached or interconnected by one or more bridges or walkways or while dependent on or affecting the processes of the facility, including any ROV attached to the facility. One facility may include multiple derrick rigs, drilling units, vessels, platforms, installations, devices, and pieces of equipment. Facilities include Mobile Offshore Drilling Unit(s) (MODU), even while operating in the "tender assist" mode (i.e., with skid-off drilling units), or any other vessel engaged in drilling or downhole operations, including well-stimulation vessels, while temporarily or permanently attached to the seabed and exploring for, developing, or producing oil and gas or sulphur resources. Facilities also include all Floating Production Systems (FPSs), including Column-Stabilized-Units (CSUs), Floating Production, Storage and Offloading facilities (FPSOs), Tension-Leg Platforms (TLPs), and spars, while temporarily or permanently attached to the seabed. Any vessel used to transfer production from an offshore facility is part of the facility while physically attached to it. Facilities also include all DOI-regulated pipelines and any installation, structure, vessel, equipment, or device connected to such a pipeline, whether temporarily or permanently, while so connected.</p>
		<p><i>Facility emissions</i> means, for any given criteria or precursor air pollutant, the annual, the maximum 12-month rolling sum, and the peak hourly emissions from all emissions sources on or connected to a facility.</p>	<p>See comments to § 550.205(c) whereby we request the removal of 12-month rolling sum.</p>	<p><i>Facility emissions</i> means, for any given criteria or precursor air pollutant, the maximum projected annual, the maximum 12-month rolling sum, and the peak hourly emissions from all emissions sources on or connected to included in a facility.</p>
		<p><i>Federally-recognized Indian tribe</i> refers to a Federally-recognized Indian tribe that has either a Treatment as State (TAS) status recognized by the USEPA or an approved TIP.</p>	<p>As discussed in Section 2.2 of our comments, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed.</p>	<p><i>Federally-recognized Indian tribe</i> refers to a Federally-recognized Indian tribe that has either a Treatment as State (TAS) status recognized by the USEPA or an approved TIP.</p>
		<p><i>Fugitive emissions</i> means the emissions of an air pollutant from an emissions source that do not pass through a stack, chimney, vent, or other functionally-equivalent opening.</p>	<p>No comments regarding this definition.</p>	<p>N/A</p>
		<p><i>Fully reduced</i> means to decrease emissions of VOCs to a rate that will not exceed the emission exemption threshold calculated under § 550.302, or to decrease emissions of criteria air pollutants to a rate that will not exceed the Significant Impact Levels set out in the table in 40 CFR 51.165(b)(2).</p>	<p>We request changes to the definition of <i>Fully reduced</i> to be consistent with changes proposed in other sections of Subpart C.</p>	<p><i>Fully reduced</i> means to decrease emissions of VOCs to a rate that will not exceed the emission exemption threshold calculated under § 550.302, or to decrease emissions of criteria air pollutants to a rate that will not exceed the applicable Significant Impact Levels or NAAQS set out in the table in 40 CFR 51.165(b)(2).</p>
		<p><i>Long-term facility</i> means a facility that has remained or is intended to remain in the same lease block or within one nautical mile of its original location for three years or longer; this three year period is measured from the time the facility is first attached to the seafloor, or another facility, and continues to run until the facility's planned operations cease, regardless of the length of time the facility remains attached to the seafloor in any given year.</p>	<p>As discussed in Section 5 of our comments, we request changes to the definition of <i>Long-term facility</i> to be consistent with our requested changes to definition of <i>Facility</i>.</p>	<p><i>Long-term facility</i> means a "facility" that operates has remained or is intended to remain in the same lease block or within one nautical mile of its original location for three years or longer; this three year period is measured from the time the facility is first attached to the seafloor, or another facility, and continues to run until the facility's planned operations cease, regardless of the length of time the facility remains attached to the seafloor in any given year.</p>
		<p><i>Major precursor pollutant</i> means any precursor pollutant for which the States are required to report actual emissions to the USEPA, as defined in 40 CFR 51.15(a).</p>	<p>We recommend deleting this definition because the proposed rule does not appear to distinguish among major precursor pollutant, precursor air pollutant, and precursor pollutant. See alternative definition for precursor pollutant below.</p>	<p><i>Major precursor pollutant</i> means any precursor pollutant for which the States are required to report actual emissions to the USEPA, as defined in 40 CFR 51.15(a).</p>
		<p><i>MARPOL-certified engine</i> means either: (1) An engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 liters installed on a ship constructed on or after January 1, 1990 but prior to January 1, 2000 that is subject to regulation 13.7 of MARPOL Annex VI; or (2) An engine with a power output of more than 130 kW built on or after January 1, 2000 that is subject to regulations 13.1 through 13.6 of MARPOL Annex VI.</p>	<p>No comments regarding this definition.</p>	<p>N/A</p>

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		<i>Maximum rated capacity</i> means the maximum power an engine is capable of generating over time, expressed in kW, and if necessary, as converted from hp (where 1 hp of power equals 745.699872 Watts or 0.745699872 kW) or from the International Table values of British thermal units (Btu), where 1 Btu/hour of power equals 0.29307107 Watts or 0.00029307107 kW.	No comments regarding this definition.	N/A
		<i>National ambient air quality standards (NAAQS)</i> means the ambient air standards established by the USEPA, as mandated by the CAA (42 U.S.C. 7409), set out in 40 CFR part 50, for the common criteria air pollutants considered harmful to public health or welfare. There are two categories of the NAAQS: primary standards that set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; and secondary standards that set limits to protect public welfare when concentrations are elevated over time, including protection against visibility impairment, prevention of harm to animals, including marine mammals, fish and other wildlife, and avoidance of damage to crops, vegetation, and buildings. This term includes both categories.	We request that this definition be simplified by removing unnecessary language.	<i>National ambient air quality standards (NAAQS)</i> means the ambient air standards established by the USEPA, as mandated by the CAA (42 U.S.C. 7409), set out in 40 CFR part 50.4-13, for the common criteria air pollutants considered harmful to public health or welfare. There are two categories of the NAAQS: primary standards that set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; and secondary standards that set limits to protect public welfare when concentrations are elevated over time, including protection against visibility impairment, prevention of harm to animals, including marine mammals, fish and other wildlife, and avoidance of damage to crops, vegetation, and buildings. This term includes both categories.
		<i>Non-attainment area</i> means, for any given criteria air pollutant, a geographic area, which the Administrator of the USEPA has designated as non-attainment for a NAAQS, as codified at 40 CFR part 81 subpart C. For the purposes of these regulations, all other areas will be considered Attainment areas.	No comments regarding this definition.	N/A
		<i>Operational control</i> means a process, method or technique, other than a physical or mechanical control, or equipment replacement that reduces the emissions of criteria or precursor air pollutants (e.g., limitation on period of operation, load balancing, and/or use of less-polluting fuels).	The following change is proposed to clarify that replacement could include the substitution of other equipment in place of the primary emission source.	<i>Operational control</i> means a process, method or technique, other than a physical or mechanical control, or equipment replacement, or substitution that reduces the emissions of criteria or precursor air pollutants (e.g., limitation on period of operation, load balancing, and/or use of less-polluting fuels).
		<i>Particulate matter (PM)</i> means an airborne contaminant of particulate matter that is regulated as a criteria air pollutant under the ambient air standards. PM ₁₀ refers to airborne contaminants of particulates less than or equal to 10 micrometers. PM _{2.5} or fine PM, is an airborne contaminant composed of particulates less than or equal to a diameter of 2.5 micrometers.	No comments regarding this definition.	N/A
		<i>Plan</i> means any initial, revised, modified, resubmitted, or supplemental Exploration Plan (EP), Development and Production Plan (DPP), Development Operations Coordination Document (DOCD), or application for a Right-of-Use and Easement (RUE), a Pipeline ROW, or a lease term pipeline application.	As discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that this provision be deleted.	<i>Plan</i> means any initial, revised, modified, resubmitted, or supplemental Exploration Plan (EP), Development and Production Plan (DPP), Development Operations Coordination Document (DOCD), or application for a Right-of-Use and Easement (RUE); a Pipeline ROW, or a lease term pipeline application.
		<i>Potential to emit (PTE)</i> means the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, will be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Attributed emissions are not counted in determining a facility's PTE.	We request that this definition be deleted as it is not necessary if <i>projected emissions</i> is used in the regulation.	<i>Potential to emit (PTE)</i> means the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, will be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Attributed emissions are not counted in determining a facility's PTE.
		<i>Precursor air pollutant or precursor pollutant</i> means a compound that chemically reacts with other atmospheric gases to form a criteria air pollutant. Some precursor air pollutants are also defined as criteria air pollutants. Precursor air pollutants include VOCs, NO _x , SO _x , and NH ₃ .	We request that BOEM revise the definition to reflect EPA's definition of precursor air pollutant, which is more appropriate for plan reviews.	<i>Precursor air pollutant or precursor pollutant</i> means those compounds defined at 40 CFR 51.166(b)(4)(i) that chemically reacts with other atmospheric gases to form a criteria air pollutant. Some precursor air pollutants are also defined as criteria air pollutants. Precursor air pollutants include VOCs, NO _x , SO _x , and NH ₃ .
		<i>Projected emissions</i> means, for any given criteria or precursor air pollutant, the sum of facility's (or facilities') emissions and the corresponding attributed emissions over the specified time period, with the controlled or uncontrolled nature of the pollutants specified by the context.	See comments to § 550.205(c)(1) that address operator-proposed measures to reduce emissions to more accurately reflect expected emissions for a facility. Also, as explained in Section 12.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that the language related to attributed emissions be eliminated from this definition.	<i>Projected emissions</i> means, for any given criteria or precursor air pollutant, the sum of a facility's (or facilities') emissions and the corresponding attributed emissions over the specified time period, taking into consideration emissions controls, expected utilization, and operational controls with the controlled or uncontrolled nature of the pollutants specified by the context.

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		<i>Proximate activities</i> means activities that involve or affect any of the following: the same well(s); a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, facilities located within one nautical mile of one another. Where a well is drilled from one facility, but production from that well will ultimately take place through a different facility, the drilling and production activities constitute proximate activities if they occur within the same twelve months.	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the definition of <i>proximate activities</i> be deleted.	<i>Proximate activities</i> means activities that involve or affect any of the following: the same well(s); a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, facilities located within one nautical mile of one another. Where a well is drilled from one facility, but production from that well will ultimately take place through a different facility, the drilling and production activities constitute proximate activities if they occur within the same twelve months.
		<i>Sensitive Class II area</i> means a Class II area defined by an FLM agency as being federal land where protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or policy.	As discussed in Sections 1.2.7 and 2.2 of our comments, BOEM's sole authority is for regulating compliance with the NAAQS. Therefore, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed.	<i>Sensitive Class II area</i> means a Class II area defined by an FLM agency as being federal land where protection of air resources has been prioritized, as specified in acts, regulations, planning documents, or policy.
		<i>Short-term facility</i> means any facility that is not a long-term facility or connected to a long-term facility.	No comments regarding this definition.	N/A
		<i>Significance level or Significant impact level (SIL)</i> means an ambient air benchmark or limit that applies to the ambient air impact of the emissions of a criteria air pollutant, as set out in the table in 40 CFR 51.165(b)(2).	As discussed in Section 9 of our comments, we believe SILs are appropriate for use in nonattainment areas but too stringent for use in attainment areas.	<i>Significance level or Significant impact level (SIL)</i> means an ambient air benchmark or limit that applies to the ambient air impact of the emissions of a criteria air pollutant, as set out in the table in 40 CFR 51.165(b)(2). For those criteria pollutants or averaging periods for which there are no SILs, an interim SIL equal to five percent of the corresponding NAAQS will be in effect until EPA promulgates SILs or BOEM adopts new SILs that are based on air quality studies underway in the Gulf of Mexico and Alaska.
		<i>Technically feasible</i> means a technology or methodology that has been demonstrated to operate successfully on the same type of emissions source as the one under review, or is available and applicable to the type of emissions source under review.	As discussed in Section 7.1.2 of our comments we request that BOEM further clarify how technical feasibility and cost effectiveness will be considered consistent with the requirements of OCSLA 43 U.S.C. § 1347(b).	N/A
		<i>Total support emissions</i> means, for any criteria or precursor air pollutant, the total emissions generated by an MSC that operates in support of your and any other facilities, for the 12-month period over which the corresponding facility emissions are measured. For example, for any given MSC, the total support emissions would equal the number of service trips (i.e., from the port to the supported facilities) made during the relevant 12-month period multiplied by the average number of hours per service trip multiplied by the emissions per hour for all emissions source(s) on that MSC (derived from the emissions factor calculation).	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that this definition be eliminated.	<i>Total support emissions</i> means, for any criteria or precursor air pollutant, the total emissions generated by an MSC that operates in support of your and any other facilities, for the 12-month period over which the corresponding facility emissions are measured. For example, for any given MSC, the total support emissions would equal the number of service trips (i.e., from the port to the supported facilities) made during the relevant 12-month period calendar year multiplied by the average number of hours per service trip multiplied by the emissions per hour for all emissions source(s) on that MSC (derived from the emissions factor calculation).
<i>What analysis of my projected emissions is required under this subpart?</i>	550.303(a)	<i>Establishing emission exemption thresholds.</i> BOEM establishes the rate of projected emissions, calculated for each air pollutant, above which facilities would be subject to the requirement to perform modeling. These EETs establish those rates of emissions below which BOEM has determined emissions would not significantly affect the air quality of any State. If your projected emissions or complex total emissions are exempt, then you will not be required to perform air quality modeling in accordance with the requirements of § 550.304 and to apply any controls, as described in §§ 550.305 through 550.307.	As stated in the Section § 550.303(a) emissions below the EET have been determined not to significantly affect the air quality of any state therefore no additional requirements of Subpart C are warranted to ensure compliance with NAAQS. Specifically, no additional measuring, monitoring or recordkeeping as proposed in Sections § 550.309(d), 311 and 312 should be required. The reporting requirements addressed in the OCS inventory requirements of Section 550.187 are adequate to ensure emissions do not exceed the EET values and thus impact air quality onshore. The proposed alternative language presented addresses this requested change. As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Furthermore, as discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the term <i>complex total</i> be deleted.	<i>Establishing emission exemption thresholds.</i> BOEM establishes the rate of projected emissions, calculated for each criteria air pollutant, above which facilities would be subject to the requirement to perform modeling. These EETs establish those rates of emissions below which BOEM has determined emissions would not significantly affect the air quality of any State. If your projected emissions or complex total emissions are exempt, then you will not be required to perform air quality modeling in accordance with the requirements of § 550.304 and to apply any controls, as described in §§ 550.305 through 550.307.
	550.303(b)	<i>Calculating projected emissions.</i> You must compare your projected emissions, or your complex total emissions if you are required to consolidate multiple facilities under paragraph (d) of this section, with the EETs, pursuant to the following methodology: (1) <i>Projected emissions.</i> You must calculate and report the projected emissions for each facility as set forth in § 550.205(e). (2) <i>Attributed emissions.</i> You must calculate and report all attributed emissions for each facility as set forth in § 550.205(d).	As discussed in Section 4 and 5 of our comments, we request that BOEM remove the inclusion of terms <i>complex total</i> and <i>attributed emissions</i> consistent with the requested changes discussed in the definition of <i>Facility</i> in § 550.302(b) above.	<i>Calculating projected emissions.</i> You must calculate and report the projected emissions for each facility as set forth in § 550.205(c) and compare your projected emissions, or your complex total emissions if you are required to consolidate multiple facilities under paragraph (d) of this section, with the EETs, pursuant to the following methodology: (1) <i>Projected emissions.</i> You must calculate and report the projected emissions for each facility as set forth in § 550.205(e). (2) <i>Attributed emissions.</i> You must calculate and report all attributed emissions for each facility as set forth in § 550.205(d).
	550.303(c)	<i>Exempt emissions thresholds.</i> BOEM will establish EETs under this paragraph. These will determine whether your projected emissions or complex total emissions have the potential to significantly affect the air quality of any State.	As discussed in Section 4 and 5 of our comments, we request that BOEM remove the terms <i>complex total emissions</i> .	<i>Exempt emissions thresholds.</i> BOEM will establish EETs under this paragraph. These will determine whether your projected emissions or complex total emissions have the potential to significantly affect the air quality of any State.

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.303(c)(1)	BOEM will establish new EETs based on the factors listed in this paragraph and publish them in the <i>Federal Register</i> . BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds an EET, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307, unless scientific evidence and the application of the factors set in paragraph (c)(2) of this section demonstrates otherwise.	Based on review of past modeling analyses, BOEM's own studies, State Implementation Plans (SIPs), and Department of Interior studies it has been determined that OCS facilities have minimal impact on onshore air quality. Therefore, the current EETs are protective of on shore air quality and do not need to be revised. See Section 2.3 of our comments for supporting documentation. Any future changes to the EETs must be based on the ongoing studies as discussed in Section 6.1.	BOEM will establish new EETs based on the factors listed in this paragraph and publish them in the <i>Federal Register</i>. BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. BOEM may establish different EETs that apply to different areas of the OCS or that apply to different kinds of emissions sources. If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds an EET, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307, unless scientific evidence and the application of the factors set in paragraph (c)(2) of this section demonstrates otherwise.
	550.303(c)(1)(i)	The first time that BOEM establishes a new set of EETs, BOEM will publish a notice in the <i>Federal Register</i> describing the proposed EETs and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EETs. BOEM will publish a subsequent notice in the <i>Federal Register</i> listing the new EETs, along with a corresponding effective date for the new EETs.	Proposed regulatory language regarding BOEM's first and subsequent revisions has been streamlined because the procedures specified in § 550.303(c)(1)(i) and (ii) are identical. Furthermore, as discussed in Section 1.5.5 of our comments we request that future EETs go through the full rule making process and not just a public notice in <i>Federal Register</i> .	4th time Each time that BOEM establishes a new set of EET(s), BOEM will publish a proposed rule publish a notice in the <i>Federal Register</i> describing the proposed EETs and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EETs. BOEM will publish a subsequent final rule notice in the <i>Federal Register</i> listing the new EETs, along with a corresponding effective date for the new EETs.
	550.303(c)(1)(ii)	Any time that BOEM determines that a revised EET should be established, BOEM will publish a notice in the <i>Federal Register</i> describing the proposed revised EET and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EET. BOEM will publish a subsequent notice in the <i>Federal Register</i> listing revised EET, along with a corresponding effective date for the revised EET.	See comment on § 550.303(c)(1)(i) above.	Any time that BOEM determines that a revised EET should be established, BOEM will publish a notice in the <i>Federal Register</i> describing the proposed revised EET and will specify the length of a corresponding comment period. At the conclusion of the comment period, BOEM will review and evaluate the comments and make a determination as to the final EET. BOEM will publish a subsequent notice in the <i>Federal Register</i> listing revised EET, along with a corresponding effective date for the revised EET.
	550.303(c)(1)(iii)	Until the date of the notice, a facility will not be exempt under this section if its projected emissions of any pollutant exceed EETs as calculated using the following formulas: (A) EET= 3400 x D ^{2/3} for emissions of carbon monoxide (CO); and (B) EET= 33.3 x D for emissions of each of the following: nitrogen oxides (NO _x), SO _x ; volatile organic compounds (VOCs), and PM ₁₀ . Where D is the distance of the facility from the shoreline, as identified in § 550.205(i)(1). (C) For Pb, the EET value is the level defined in 40 CFR 52.21(b)(2)(3)(i).	As stated above to comments on § 550.303(c)(1) the current EETs are protective of air quality levels on shore and thus do not require revision. As discussed in sections 2.4 and 6.1, BOEM should not finalize emissions exemption threshold ranges prior to completing its scientific studies. Furthermore, as discussed in Section 6.3, EETs must account for distance to the onshore area of a State	Until the date of the notice, a facility will not be exempt under this section if its projected emissions of any pollutant exceed EETs as calculated using the following formulas: (A) EET= 3400 x D^{2/3} for emissions of carbon monoxide (CO); and (B) EET= 33.3 x D for emissions of each of the following: nitrogen oxides (NO_x), SO_x; volatile organic compounds (VOCs), PM_{2.5}, and PM₁₀. Where D is the distance of the facility from the shoreline, as identified in § 550.205(i)(1). (C) For Pb, the EET value is the level defined in 40 CFR 52.21(b)(2)(3)(i).
	550.303(c)(1)(iv)	Subsequent to the date of the notice, a facility will not be exempt under this section if its projected emission of any pollutant exceeds an EET published in the notice.	We request this provision be deleted to be consistent with the proposed changes to § 550.303(c)(1)(i).	Subsequent to the effective date of the notice, a facility must reevaluate and resubmit their plans according to the table 550.303(c)(2) will not be exempt under this section if its projected emission of any pollutant exceeds an EET published in the notice.
	550.303(c)(1)(v)	Because the USEPA's AAQSB are subject to change as scientific knowledge improves and because modeling and evaluation techniques may improve over time, BOEM will revise EETs on an ongoing basis. Thus, as the USEPA revises the NAAQS, or any applicable SIL or AA1, BOEM, at its discretion, will periodically revise its EET formula(s) or its amount(s) for the corresponding air pollutant(s), as appropriate.	Clarification added to the proposed regulatory language to reference the specific provisions that address how BOEM will revise EET values and to remove unnecessary regulatory language. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants.	Because the USEPA's AAQSB are subject to change as scientific knowledge improves and because modeling and evaluation techniques may improve over time, BOEM will revise EETs on an ongoing basis. Thus, as the USEPA revises the NAAQS, or any applicable SIL or AA1, BOEM, at its discretion, will periodically revise its EET formula(s) or its amount(s) for the corresponding criteria air pollutant(s), as appropriate, and publish draft EETs according to 550.303(c)(1)(i).
	550.303(c)(2)	BOEM will determine new EET formulas taking into account the following factors:	No comments regarding this provision.	N/A
	550.303(c)(2)(i)	The absolute level of projected emissions;	No comments regarding this provision.	N/A
	550.303(c)(2)(ii)	The distance of the proposed facility or facilities from any State or from areas critical to natural resources, animals, and habitats;	As discussed in Section 2.2 of our comments, BOEM cannot require plans to address air quality assessments other than NAAQS; therefore, we request the removal of such language from this provision.	The distance of the proposed facility or facilities from any coastal State or from areas critical to natural resources, animals, and habitats;
	550.303(c)(2)(iii)	The existing ambient air pollution in potentially affected States, trend in the ambient air pollution in those States, the associated attainment status of such areas, and the associated effects to public health and welfare;	We request the removal of unnecessary language from this provision.	The existing ambient air pollution in potentially affected coastal States, trend in the ambient air pollution in those States, and the associated attainment status of such areas, and the associated effects to public health and welfare attainment status should address public health and welfare;
	550.303(c)(2)(iv)	Any USEPA AAQSB applied in this part;	We request this provision be updated to reflect the requested revisions to the definitions in § 550.302(b).	Any NAAQS or SIL AAQSB applied in this part;
	550.303(c)(2)(v)	The types, frequency, and duration of any air pollutant emissions and their formation and/or dispersion characteristics;	As noted in other comments, specificity should be added to this paragraph that clarifies that the pollutants subject to this provision are criteria air pollutants.	The types, frequency, and duration of any criteria air pollutant emissions and their formation and/or dispersion characteristics;

Appendix A - Requested Changes to Proposed Rule

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	550.303(c)(2)(vi)	The characteristics of the facility or facilities and MSCs, including the type and nature of the emissions sources, and the height of the associated points or stacks;	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that the reference to MSCs be deleted.	The characteristics of the facility or facilities and MSCs, including the type and nature of the emissions sources, and the height of the associated points or stacks;																																
	550.303(c)(2)(vii)	Prevailing meteorological characteristics in any given area, including air stability, relevant wind speeds and directions;	No comments on this provision.	N/A																																
	550.303(c)(2)(viii)	The amount of emissions from existing facilities and vessels in the vicinity of the proposed facility; and	It is requested that this provision be deleted as it is unnecessary and identifies items that are already captured under other provisions of § 550.303(c)(2).	The amount of emissions from existing facilities and vessels in the vicinity of the proposed facility; and																																
	550.303(c)(2)(ix)	Other necessary and appropriate considerations.	No comments on this provision.	N/A																																
	550.303(c)(3)	BOEM will set the EET formulas within the following ranges:	Based on review of past modelling analyses, BOEM's own studies, State Implementation Plans (SIPs), and Department of Interior studies it has been determined that OCS facilities have minimal impact on onshore air quality. Therefore, the current EETs are protective of on shore air quality and do not need to be revised. See Section 2.3 of our comments for supporting documentation. Any future changes to the EETs must be based on the ongoing studies as discussed in Section 6.1.	BOEM will set the EET formulas within the following ranges:																																
	550.303(c)(3)(i)	The minimum values in this range are determined by the formulas in table 1 to § 550.303. <table border="1"> <caption>Table 1 to § 550.303</caption> <thead> <tr> <th>Minimum Value Equation</th> <th>Pollutant* and Averaging Period</th> </tr> </thead> <tbody> <tr> <td>$E_{min} = 0.677d^{1.209}$</td> <td>Annual NO_x, SO_x, and PM₁₀</td> </tr> <tr> <td>$E_{min} = 0.203d^{1.209}$</td> <td>Annual PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 3.381d^{1.209}$</td> <td>24-hr SO₂ and PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 0.812d^{1.209}$</td> <td>24-hr PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 135d^{1.209}$</td> <td>1-hr CO</td> </tr> <tr> <td>$E_{min} = 338.51d^{1.209}$</td> <td>8-hr CO</td> </tr> <tr> <td>$E_{min} = 16.926d^{1.209}$</td> <td>3-hr SO₂</td> </tr> </tbody> </table> <p>*Where <i>d</i> is the distance in statute miles from the State seaward boundary, as reported in your plan under § 50.205(a)(2), and <i>E_{min}</i> equals tons per year. *For PM_{2.5}, the minimum value amount is the level defined in 40 CFR 52.119(a)(2)(ii).</p>	Minimum Value Equation	Pollutant* and Averaging Period	$E_{min} = 0.677d^{1.209}$	Annual NO _x , SO _x , and PM ₁₀	$E_{min} = 0.203d^{1.209}$	Annual PM _{2.5}	$E_{min} = 3.381d^{1.209}$	24-hr SO ₂ and PM _{2.5}	$E_{min} = 0.812d^{1.209}$	24-hr PM _{2.5}	$E_{min} = 135d^{1.209}$	1-hr CO	$E_{min} = 338.51d^{1.209}$	8-hr CO	$E_{min} = 16.926d^{1.209}$	3-hr SO ₂	See comments to § 550.303(c)(3) above. Furthermore, as documented in Section 6.6 of our comments the minimum EETs proposed in Table 1 contain a material error and utilize an overly conservative Gaussian equation. As discussed previously, there are extensive studies being conducted now that should be considered before establishing any new EET values.	The minimum values in this range are determined by the formulas in table 1 to § 550.303. Delete Table 1 below. <table border="1"> <caption>Table 1 to § 550.303</caption> <thead> <tr> <th>Minimum Value Equation</th> <th>Pollutant* and Averaging Period</th> </tr> </thead> <tbody> <tr> <td>$E_{min} = 0.677d^{1.209}$</td> <td>Annual NO_x, SO_x, and PM₁₀</td> </tr> <tr> <td>$E_{min} = 0.203d^{1.209}$</td> <td>Annual PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 3.381d^{1.209}$</td> <td>24-hr SO₂ and PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 0.812d^{1.209}$</td> <td>24-hr PM_{2.5}</td> </tr> <tr> <td>$E_{min} = 135d^{1.209}$</td> <td>1-hr CO</td> </tr> <tr> <td>$E_{min} = 338.51d^{1.209}$</td> <td>8-hr CO</td> </tr> <tr> <td>$E_{min} = 16.926d^{1.209}$</td> <td>3-hr SO₂</td> </tr> </tbody> </table> <p>*Where <i>d</i> is the distance in statute miles from the State seaward boundary, as reported in your plan under § 50.205(a)(2), and <i>E_{min}</i> equals tons per year. *For PM_{2.5}, the minimum value amount is the level defined in 40 CFR 52.119(a)(2)(ii).</p>	Minimum Value Equation	Pollutant* and Averaging Period	$E_{min} = 0.677d^{1.209}$	Annual NO _x , SO _x , and PM ₁₀	$E_{min} = 0.203d^{1.209}$	Annual PM _{2.5}	$E_{min} = 3.381d^{1.209}$	24-hr SO ₂ and PM _{2.5}	$E_{min} = 0.812d^{1.209}$	24-hr PM _{2.5}	$E_{min} = 135d^{1.209}$	1-hr CO	$E_{min} = 338.51d^{1.209}$	8-hr CO	$E_{min} = 16.926d^{1.209}$	3-hr SO ₂
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	550.303(c)(3)(ii)	The maximum values of this range are set by the following formulas: (A) If $d \leq 3$, then $E_{max} = 7072$ for CO; and $E_{max} = 100$ for NO _x , SO _x , VOCs, and PM ₁₀ . (B) If $d > 3$, then $E_{max} = 3400 \times d^{2/3}$ for CO; and $E_{max} = 33.3 \times d$ for NO _x , SO _x , VOCs, and PM ₁₀ . Where <i>d</i> will be the distance of the facility from the SSB as identified in § 550.205(a)(2).	See comments to § 550.303(c)(1) above.	The maximum values of this range are set by the following formulas: (A) If $d \leq 3$, then $E_{max} = 7072$ for CO; and $E_{max} = 100$ for NO _x , SO _x , VOCs, and PM ₁₀ . (B) If $d > 3$, then $E_{max} = 3400 \times d^{2/3}$ for CO; and $E_{max} = 33.3 \times d$ for NO _x , SO _x , VOCs, and PM ₁₀ . Where <i>d</i> will be the distance of the facility from the SSB as identified in § 550.205(a)(2).																																
	550.303(c)(4)	If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds the EETs as determined pursuant to § 550.303, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307.	See comments to § 550.205(c)(1) that address an operator-proposed measure to reduce emissions to more accurately depict projected emissions for a facility.	If your projected emissions for any criteria air pollutant or precursor air pollutant exceeds the EETs as determined pursuant to § 550.303 after applying mitigation, then you will be required to perform air quality modeling in accordance with the requirements of § 550.304 and you may be required to apply controls, as described in §§ 550.305 through 550.307.																																
	550.303(d)(1)	Consolidation of air pollutant emissions from multiple facilities. (1) You must report the projected emissions from multiple facilities which may have been or are described in multiple plans, as the complex total emissions for your plan, if:	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that this provision be deleted.	Consolidation of air pollutant emissions from multiple facilities. (1) You must report the projected emissions from multiple facilities which may have been or are described in multiple plans, as the complex total emissions for your plan, if:																																
	550.303(d)(1)(i)	The air pollutant emissions are generated by proximate activities (i.e., the same well(s), a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, by facilities located within one nautical mile of one another); and	See comments to § 550.303(d)(1) above.	The air pollutant emissions are generated by proximate activities (i.e., the same well(s), a common oil, gas, or sulphur reservoir; the same or adjacent lease block(s); or, by facilities located within one nautical mile of one another); and																																
	550.303(d)(1)(ii)	You wholly or partially own, control or operate those facilities; in the event of a dispute as to what constitutes common ownership, control or operations, BOEM will make a determination by reference to the ONRR criteria defined in 30 CFR 1206.101 and 1206.151; and	See comments to § 550.303(d)(1) above.	You wholly or partially own, control or operate those facilities; in the event of a dispute as to what constitutes common ownership, control or operations, BOEM will make a determination by reference to the ONRR criteria defined in 30 CFR 1206.101 and 1206.151; and																																

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	550.303(d)(1)(iii)	The construction, installation, drilling, operation, or decommissioning of any of your facilities occurs within a contemporaneous 12-month period as the construction, installation, drilling operation, or decommissioning of any other facility; and	See comments to § 550.303(d)(1) above.	The construction, installation, drilling, operation, or decommissioning of any of your or the designated operator's facilities occurs within a calendar year contemporaneous 12-month period as the construction, installation, drilling operation, or decommissioning of any other of the designated operator's facility; and
	550.303(d)(1)(iv)	Such a consolidation of emissions from multiple facilities would generate emissions sufficient to exceed an applicable emission exemption threshold (based on the exemption review described in paragraphs (c) or (d) of this section).	See comments to § 550.303(d)(1) above.	Such a consolidation of emissions from multiple facilities would generate emissions sufficient to exceed an applicable emission exemption threshold (based on the exemption review described in paragraphs (c) or (d) of this section).
	550.303(d)(2)	If any two or more facilities meet all of the conditions specified in (d)(1)(i) through (iii) of this section, you must calculate the sum of the projected emissions from those facilities (including their respective attributed emissions) as the complex total emissions for your plan.	See comments to § 550.303(d)(1) above.	If any two or more facilities meet all of the conditions specified in (d)(1)(i) through (iii) of this section, you must calculate the sum of the projected emissions from those facilities (including their respective attributed emissions) as the complex total emissions for your plan.
	550.303(d)(3)	BOEM will make a determination that you have appropriately considered the relevant data in your analysis of the complex total emissions.	See comments to § 550.303(d)(1) above.	BOEM will make a determination that you have appropriately considered the relevant data in your analysis of the complex total emissions.
	550.303(d)(4)	If you are required to consolidate projected emissions data from multiple facilities, then anywhere a requirement applies to projected emissions you must instead use complex total emissions, except with respect to the process by which projected emissions are determined for any given facility (as specified in § 550.205(d)).	See comments to § 550.303(d)(1) above.	If you are required to consolidate projected emissions data from multiple facilities, then anywhere a requirement applies to projected emissions you must instead use complex total emissions, except with respect to the process by which projected emissions are determined for any given facility (as specified in § 550.205(d)).
	550.303(e)	Emissions do not exceed any threshold. If none of your projected emissions or complex total emissions of any precursor or criteria air pollutant exceeds the applicable emission exemption threshold, then your projected emissions are <i>de minimis</i>, and no further analysis is required under this subpart.	Revisions to the proposed regulatory text were added to clarify that a facility is exempt from all provisions of Subpart C if projected emissions are below all EET values. Also, see comments to § 550.303(d)(1) above regarding the deletion of the term complex total emissions from this provision.	Emissions do not exceed any threshold. If none of your projected emissions or complex total emissions of any precursor or criteria air pollutant exceeds the applicable emission exemption threshold, then your projected emissions are <i>de minimis</i>, and no further analysis is required under this subpart; you are exempt from additional requirements as prescribed in Subpart C.
	550.303(f)	Emissions exceed a threshold. If your projected emissions or complex total emissions of the precursor or criteria air pollutant exceed the applicable emission exemption threshold, then further review and/or controls are required, in accordance with the provisions below:	See comments to § 550.303(d)(1) above regarding the deletion of the term complex total emissions from this provision.	Emissions exceed a threshold. If your projected emissions or complex total emissions of the precursor or criteria air pollutant exceed the applicable emission exemption threshold, then further review and/or controls are required, in accordance with the provisions below:
	550.303(f)(1)	If the exceedance is for VOCs, you must control your emissions of VOCs in accordance with § 550.306, for a short-term facility, or § 550.307, for a long-term facility.	As discussed in sections 1.2.2 and 9.4 of our comments, BOEM's proposed regulatory requirements for VOC neither consider the significance of the effect of the emissions on the air quality of a state nor endeavor to assess the impact of the emissions on onshore attainment or maintenance of the NAAQS and thus this provision is inconsistent with the mandate of OCSLA section 5(a)(8) and exceed BOEM's authority. BOEM should wait until the completion of the ongoing air emission impact studies to determine appropriate actions for VOCs.	If the exceedance is for VOCs, you must control your emissions of VOCs in accordance with § 550.306, for a short-term facility, or § 550.307, for a long-term facility.
	550.303(f)(2)	If the exceedance is for any criteria air pollutant, then you must conduct modeling in accordance with § 550.304.	No comments regarding this paragraph.	N/A
	550.303(f)(3)	If the exceedance is for NO _x , VOCs, or CO, and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for O ₃ .	Expensive and complex photochemical modeling is not warranted given the minimal impact of OCS facilities on onshore air quality. See additional discussions as provided in Section 8.2 of our comments.	If the exceedance is for NO_x, VOCs, or CO, and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for O₃.
	550.303(f)(4)	If the exceedance is for NO _x , VOCs, PM _{2.5} , or SO _x , and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for PM _{2.5} .	See response above response to § 550.303(f)(3).	If the exceedance is for NO_x, VOCs, PM_{2.5}, or SO_x, and if the conditions specified in § 550.304(b) have been met, you are required to conduct photochemical modeling for PM_{2.5}.
	550.303(g)(1)	Changes to previously approved plans. (1) If you change your plan implementation, such that your projected emissions, or your complex total emissions, will occur in years other than those that were previously approved, you must submit a revised plan, and that revised plan must be approved before you implement the proposed changes.	It is requested that this provision be revised to be consistent with the proposed changes in § 550.205(c)(2) and to remove the term <i>complex total emissions</i> as previously discussed.	Changes to previously approved plans. (1) If you change your plan implementation, such that your facility maximum projected emissions, or your complex total emissions, will occur in years other than those that were previously approved, you must submit a revised plan, and that revised plan must be approved before you implement the proposed changes.
	550.303(g)(2)	If at any time you anticipate an increase in the maximum air pollutant emissions from a previously approved plan, you must submit a revised plan, pursuant to 30 CFR 550.283(a)(4).	As noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria pollutants and the time period and emission basis for comparison.	If at any time you anticipate an increase in annual facility emissions above in the maximum annual criteria air pollutant emissions from a previously approved plan, you must submit a revised plan, pursuant to 30 CFR 550.283(a)(4).
	550.303(g)(3)	If you propose to make a change to your operations on your existing facility or facilities, but not in the equipment used in such operations, and your approved projected annual emissions in any given year are higher than those previously approved for the particular year, but lower than the maximum air pollutant emissions for any year, you do not need to submit a revised plan -- as long as the operations would occur in the same year as	This subsection is repetitive with the requirement in § 550.280(a). It is suggested that this text be eliminated and the text in § 550.280(a) be revised based on the suggested language changes.	If you propose to make a change to your operations on your existing facility or facilities, but not in the equipment used in such operations, and your approved projected annual emissions in any given year are higher than those previously approved for the particular year, but lower than the maximum air pollutant emissions for any year, you do not need to submit a revised plan -- as long as the operations would occur in the same year as described in the previous plan.

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		described in the previous plan.		
	550.303(g)(4)	If you propose to make a change to the equipment on your existing facility or facilities in a year or years where your plan already anticipated operations, and your proposed change would result in an increase in air pollutant emissions from that equipment for any air pollutant, you must submit a revised plan.	This subsection is repetitive with the requirement in § 550.280(a). It is suggested that this text be eliminated and the text in § 550.280(a) be revised based on the suggested language changes.	If you propose to make a change to the equipment on your existing facility or facilities in a year or years where your plan already anticipated operations and your proposed change would result in an increase in air pollutant emissions from that equipment for any air pollutant, you must submit a revised plan.
	550.303(g)(5)	If your plan was approved for a short-term facility that becomes a long-term facility, then you must submit a revised plan for review and approval by BOEM.	BOEM needs to clarify that a short-term facility can continue to operate while awaiting BOEM approval of its revised plan to become a long-term facility.	N/A
	550.303(h)	<i>Federal land manager.</i> If BOEM believes that your proposed activities may affect a Class I or a Sensitive Class II area of a State:	As discussed in Section 1.2.7 of our comments, OCLSA did not grant FLMs any authority over OCS emissions, and it did not authorize BOEM to use its section 5(a)(8) authority as a means of protecting AQRVs that are of concern to FLMs. Therefore, we request that this provision be removed.	Federal land manager. If BOEM believes modeling and Q-D analysis indicates that your proposed activities may affect NAAQS in a Class I or a Sensitive Class II area of a State:
	550.303(h)(1)	BOEM may consult with one or more relevant FLMs to determine what effects could result from your proposed activities.	See comments to § 550.303(h) above.	N/A
	550.303(h)(2)	BOEM will consider the views of the FLMs in determining whether your plan complies with the provisions of this subpart. Based on this consultation, BOEM may require additional information and analysis, either prior to or as a condition of approving your plan.	See comments to § 550.303(h) above.	BOEM will consider the views of the FLMs in determining whether your plan complies with the provisions of this subpart. Based on this consultation, BOEM may require additional information and analysis, either prior to or as a condition of approving your plan.
	550.303(h)(3)	If the FLM does not raise any concerns regarding your plan in a timely manner, BOEM will assume that the FLM has no objections to the proposed plan.	See comments to § 550.303(h) above.	If the FLM does not raise any concerns regarding your plan in a timely manner 15 days, BOEM will assume that the FLM has no objections to the proposed plan.
	550.303(i) Current Regulation under § 550.303(j)	<i>Review of facilities with emissions below the exemption amount.</i> If, during the review of a new, modified, or revised Exploration Plan or Development and Production Plan, the Regional Supervisor determines or an affected State submits information to the Regional Supervisor which demonstrates, in the judgment of the regional supervisor, that projected emissions from an otherwise exempt facility will, either individually or in combination with other facilities in the area, significantly affect the air quality of an onshore area, then the Regional Supervisor shall require the lessee to submit additional information to determine whether emission control measures are necessary. The lessee shall be given the opportunity to present information to the Regional Supervisor which demonstrates that the exempt facility is not significantly affecting the air quality of an onshore area of the State.	See comments to definition of Facility in § 550.302(b) above and Section 5 of our comments.	<i>Review of facilities with emissions below the exemption amount.</i> If, during the review of a new, modified, or revised Exploration Plan or Development and Production Plan, the Regional Supervisor determines or an affected coastal State submits information to the Regional Supervisor which demonstrates, in the judgment of the regional supervisor, that projected emissions from an otherwise exempt facility will, either individually or in combination with other facilities in the area, significantly affect the air quality of an onshore area, then the Regional Supervisor shall require the lessee to submit additional emissions information to determine whether emission control measures are necessary and appropriate for NAAQS compliance. Additional emissions information requested shall be limited to information relating to facilities for which the lessee is the designated operator and that are within the 500m USCG Safety Zone of the otherwise exempt facility (measured from the center of the equipment on the surface site) that share any of the following production equipment including but not limited to, amine gas sweetening units, phase separators, natural gas dehydrators, or emissions control devices. The lessee also shall be given the opportunity to present information to the Regional Supervisor which demonstrates that the exempt facility is not significantly affecting the air quality of an onshore area of the State for NAAQS compliance.
<i>What must I do if my projected emissions exceed an emission exemption threshold?</i>	550.304	If your projected emissions or your complex total emissions exceed the limits defined in § 550.303(c) for any criteria or precursor pollutant, you must conduct modeling of that pollutant, and any other pollutant for which that pollutant is a precursor, to project the impacts of those emissions.	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the term <i>complex total emissions</i> be deleted.	If your projected emissions or your complex total emissions exceed the applicable EETs limits defined in § 550.303(c)(1)(ii) for any criteria or precursor pollutant after applying operational limitations, you must conduct modeling of that pollutant in accordance with the following paragraphs of this section and any other pollutant for which that pollutant is a precursor, to project the impacts of those emissions.
	550.304(a)(1)	<i>Dispersion models.</i> (1) You must use one or more of the following air dispersion models: (i) A model approved by the USEPA, as described in appendix A to appendix W of 40 CFR part 51 (Summaries of Preferred Air Quality Models); or (ii) A model included in the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Another model approved by the BOEM Chief Environmental Officer (CEO). (iv) The BOEM CEO may disapprove the use of a USEPA-approved or FLM-approved air quality model, if the CEO	Clarification added to allow both the preferred and alternate USEPA approved models. Additionally, the BOEM CEO should not be allowed to override EPA approved models or FLM guidance.	<i>Dispersion models.</i> (1) You must use one or more of the following air dispersion models: (i) A model approved by the USEPA (preferred or alternate), as described in appendix A to appendix W of 40 CFR part 51 (Summaries of Preferred Air Quality Models); or (ii) A model included in the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Another model approved by the BOEM Chief Environmental Officer (CEO). (iv) The BOEM CEO may disapprove the use of a USEPA-approved or FLM-approved air quality model, if the CEO determines that such model would not be appropriate in the CES context.

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		determines that such model would not be appropriate in the OCS context.		
	550.304(a)(2)	You must follow the modeling procedures recommended in 40 CFR part 51 appendix W, to the extent possible. You must provide BOEM with a copy of your dispersion modeling protocol and the associated data and assumptions used to do your analysis before you conduct modeling.	See comments to § 550.205(n) above regarding modeling protocol. Furthermore, we request adding clarification that only the portions relevant to offshore sources should be followed.	You must follow the relevant modeling procedures recommended for offshore sources in 40 CFR part 51 appendix W, to the extent possible. You must provide BOEM with a copy of your dispersion modeling protocol and the associated data and assumptions used to do your analysis before you conduct modeling.
	550.304(b)(1)	Photochemical models. Photochemical modeling is required only if: (1) Your projected emissions (or your complex total emissions where applicable) for the relevant precursor air pollutants exceed an applicable FEEI;	Expensive and complex photochemical modelling is not warranted given the minimal impact of OCS facilities on onshore air quality. See additional discussions as provided in Section 8.2 of our comments document.	Photochemical models. Photochemical modeling is required only if: (1) Your projected emissions (or your complex total emissions where applicable) for the relevant precursor air pollutants exceed an applicable FEEI;
	550.304(b)(2)	An appropriate photochemical air quality model is available that: (i) Meets the USEPA's requirements of section 3.2 of appendix W to 40 CFR; (ii) Complies with the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Is another model approved by the BOEM CEO;	See response to § 550.304(b)(1) above.	An appropriate photochemical air quality model is available that: (i) Meets the USEPA's requirements of section 3.2 of appendix W to 40 CFR; (ii) Complies with the Federal Land Managers' Air Quality Related Values Workgroup Guidance; or (iii) Is another model approved by the BOEM CEO;
	550.304(b)(3)	BOEM has determined that adequate relevant information on background concentrations is available for the relevant location(s) in a potentially affected State(s).	See response to § 550.304(b)(1) above.	BOEM has determined that adequate relevant information on background concentrations is available for the relevant location(s) in a potentially affected State(s);
	550.304(b)(4)	Upon request, you must provide BOEM with a copy of your photochemical modeling protocol and the associated data and assumptions used to do your photochemical analysis before you conduct modeling.	See comments to § 550.304(b)(1) and § 550.304(a)(2) above.	Upon request, you must provide BOEM with a copy of your photochemical modeling protocol and the associated data and assumptions used to do your photochemical analysis before you conduct modeling.
	550.304(c)	Projected emissions. Base your modeling on the maximum projected emissions, as reported under § 550.205(c), or on the complex total emissions, where applicable;	As discussed in Section 4 and 5 of our comments, the potential avoidance of BOEM requirements as result of segmenting plans is not a significant issue and the current provisions in § 550.303(j) adequately address this issue. Therefore, we request that the term <i>complex total emissions</i> be deleted.	Projected emissions. Base your modeling on the maximum projected emissions, as reported under § 550.205(c), or on the complex total emissions, where applicable;
	550.304(d)	Meteorology. Apply the best available and most recent meteorological dataset, either as directed in 40 CFR part 51 appendix W, or by using an alternate dataset approved by the Regional Supervisor.	No comments on this provision.	N/A
	550.304(e)	Estimates of ambient air concentrations. For each criteria air pollutant resulting from your projected emissions (or complex total emissions where applicable), estimate the peak incremental concentrations projected in any attainment area(s) and, separately, in any non-attainment area(s), in any State (over State submerged lands or onshore), both on an annual basis and for the other averaging times specified in the appropriate USEPA regulations at 40 CFR part 50 and the tables at 40 CFR 51.165(b)(2) and 40 CFR 52.21(c).	See comments in § 550.302(b) regarding the removal of the term <i>complex total emissions</i> from this provision. Additionally, see Section 8.9 of our comments and the proposed new definition add in § 550.302(b) regarding the addition of coastal areas to this provision.	Estimates of ambient air concentrations. For each criteria air modelled pollutant resulting from your projected emissions (or complex total emissions where applicable), estimate the peak maximum incremental-plan-related concentrations projected in any coastal attainment area(s) and separately, in any coastal non-attainment areas, in any State where a SIP identifies an OCS contributor (over State submerged lands or onshore), both on an annual basis and for the other averaging times specified in the appropriate USEPA regulations at 40 CFR part 50 and the tables at 40 CFR 51.165(b)(2) and 40 CFR 52.21(c).
	550.304(e)(1)	To the extent practicable, your estimate of the incremental ambient air concentrations of any criteria air pollutant must consider not only the dispersion of each criteria air pollutant itself, but also the formation of any criteria air pollutant that may result from the dispersion or presence of any relevant precursor air pollutant(s). Specifically: (i) Any analysis of PM _{2.5} must include NO _x , SO _x , VOCs, and NH ₃ (ii) Any analysis of O ₃ must include NO _x , VOCs, and CO.	See comments above on the definition of air pollutant contained in § 550.105.	To the extent practicable, your estimate of the incremental ambient air concentrations of any criteria air pollutant must consider not only the dispersion of each criteria air pollutant itself model predictions of PM_{2.5} and ozone must consider both direct emissions and secondary pollutant formation due to, but also the formation of any criteria air pollutant that may result from the dispersion or presence of any emissions of relevant precursor air pollutant(s), where precursor pollutants are defined at 40 CFR 51.166(b)(4)(9)(i). Specifically: (i) Any analysis of PM_{2.5} must include NO_x, SO_x, VOCs, and NH₃ (ii) Any analysis of O₃ must include NO_x, VOCs, and CO.
	550.304(e)(2)	BOEM may provide information through a Notice to Lessees to assist Lessees and operators in evaluating existing ambient air concentrations, or changes in such concentrations over time if it determines that there is an effective means of estimating ambient air quality. (i) In the event that BOEM has established appropriate background concentration data, or baseline concentration data, for any given pollutant, at any given location and point in time, you must use the data provided by BOEM. (ii) In the event that BOEM has not established appropriate background concentration data for any given pollutant, for any given location, and point in time, you should use the relevant data from the USEPA for the closest appropriate location, as specified by the Regional Supervisor.	The requested modifications reflect our proposed changes to the definition of <i>background concentration</i> as defined in § 550.302(b) and the removal of the AAI provisions as discussed above. Furthermore, as discussed in Section 1.5.3 of our comments these provisions are vague, nonspecific, and propose to establish via Notice to Lessees methods to demonstrate compliance with ambient air quality without going through the APA rulemaking process.	BOEM may provide information through a Notice to Lessees to assist Lessees and operators in evaluating existing ambient air concentrations, or changes in such concentrations over time if it determines that there is an effective means of estimating ambient air quality. (i) In the event that BOEM has established appropriate background concentration data, or baseline concentration data, for any given pollutant, at any given location and point in time, you must use the data provided by BOEM. (ii) In the event that BOEM has not established appropriate background concentration data for any given pollutant, at any given location and point in time, you should use the relevant data from the USEPA for the closest appropriate location, or as determined on some other appropriate scientifically justified basis proposed by the designated operator and approved by as specified by the Regional Supervisor.

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	550.304(f)	<i>Attributed emissions.</i> Conduct modeling of attributed emissions from those locations where the emissions are expected to occur (i.e., utilizing a line, area, volume, or pseudo point source model).	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. We request that this provision be deleted.	<i>Attributed emissions.</i> Conduct modeling of attributed emissions from those locations where the emissions are expected to occur outside of the shoreline (i.e., utilizing a line, area, volume, or pseudo-point source model).
	550.304(g)	<i>Documentation and reporting.</i> Create a modeling report documenting all emissions sources, inputs, parameters, assumptions, procedures, methods, and results, including input and output files, and data upon which your analysis under this subpart is based, and provide BOEM with this report, copies of all data and access to any programs used in your modeling.	No comments regarding this paragraph.	N/A
How do I determine whether my projected emissions of criteria air pollutants require ERM?	550.305(a)	For all criteria air pollutants other than PM _{2.5} and O ₃ , compare the results of the modeling described in § 550.304 with the SILs set out in the table at 40 CFR 51.165(b)(2). If the modeling results exceed a SIL for any criteria air pollutant for any averaging time, you are required to apply ERM to sources to reduce emissions only for the CPs that exceed a SIL, as specified in § 550.306 for a short-term facility, or as specified in § 550.307 for a long-term facility.	As discussed in Section 9 of our comments, BOEM has not clearly defined when OCS emissions "affect the air quality of any State." In Section 9, we identify appropriate definitions. The requested changes incorporate our proposed definition of "affect the air quality of any State."	For all criteria air pollutants other than PM _{2.5} and O ₃ , compare the results of the modeling described in § 550.304 with the SILs in coastal nonattainment and attainment areas set out in the table at 40 CFR 51.165(b)(2) . If the modeling results exceed a SIL for any criteria air pollutant for any averaging time in a coastal nonattainment area, you are required to apply ERM to sources to reduce emissions only for the CPs that exceed a SIL, as specified in § 550.306 for a short-term facility, or as specified in § 550.307 for a long-term facility. If the modeling results exceed the SIL in a coastal attainment area you must compare the modeled results plus the appropriate background concentration to the NAAQS. If the modeling results exceed a NAAQS for any criteria air pollutant for any averaging time in a coastal attainment area, you are required to apply ERM to sources to reduce emissions only for the CPs that exceed a NAAQS, as specified in § 550.306 for a short-term facility, or as specified in § 550.307 for a long-term facility.
	550.305(b)	For PM _{2.5} , you must add the results of your dispersion modeling of direct PM _{2.5} emissions conducted under § 550.304(a) to the results of your photochemical modeling, if required under § 550.304(b), before you compare the results with the PM _{2.5} SILs set out in the table at 40 CFR 51.165(b)(2). If this sum exceeds a SIL for PM _{2.5} for any averaging time, you are required to apply ERM for a short-term facility as specified in § 550.306, or as specified in § 550.307, for a long-term facility.	See response to § 550.304(b)(1) above.	For PM_{2.5}, you must add the results of your dispersion modeling of direct PM_{2.5} emissions conducted under § 550.304(a) to the results of your photochemical modeling, if required under § 550.304(b), before you compare the results with the PM_{2.5} SILs set out in the table at 40 CFR 51.165(b)(2). If this sum exceeds a SIL for PM_{2.5} for any averaging time, you are required to apply ERM for a short-term facility as specified in § 550.306, or as specified in § 550.307, for a long-term facility.
	550.305(c)	For O ₃ , you must add the results of your photochemical modeling, if required under § 550.304(b), to the existing background concentrations, as described under § 550.302, and determine if the sum exceeds the NAAQS for O ₃ for any averaging time. If so, for a short-term facility, you must apply ERM as specified in § 550.306, or as specified in § 550.307 for a long-term facility.	See response to § 550.304(b)(1) above.	For O₃, you must add the results of your photochemical modeling, if required under § 550.304(b), to the existing background concentrations, as described under § 550.302, and determine if the sum exceeds the NAAQS for O₃ for any averaging time. If so, for a short-term facility, you must apply ERM as specified in § 550.306, or as specified in § 550.307 for a long-term facility.
What ERM are required for a short-term facility?	550.306(a)	If any short-term facility requires ERM under § 550.303(f) for VOCs or § 550.305 for a CP, then you are required to conduct an ERM analysis to determine potential control options and their likely cost effectiveness. In conducting your ERM analysis, you must:	See comments to § 550.303(f) above.	If any short-term facility requires ERM under § 550.303(f) or § 550.305 for a CP, then you are required to conduct an ERM analysis to determine potential control options and their likely cost effectiveness. In conducting your ERM analysis, you must:
		N/A	We request the following new provisions to improve clarity by separating out operational control or replacement(s) control options from the BACT requirements that may be required by the Regional Supervisor.	550.306(a)(1) - For any given pollutant, you must perform the following analysis: (i) Identify all available operational controls or replacement(s) control options relevant to the emissions of the pollutant(s) for which ERM is required; (ii) Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable operational controls or replacement(s) controls option. (iii) Rank the technically feasible operational controls or replacement(s) controls options by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided (iv) Evaluate the most effective operational control or replacement(s) control options and document the results of your analysis; (v) Select reasonable operational controls or replacement(s) of equipment that are technically and economically feasible and that are designed to limit your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible operational controls or replacement(s) of equipment for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits. (vi) If you can demonstrate to the satisfaction of the Regional Supervisor that no technically feasible operational controls or equipment replacement(s) can be implemented cost effectively, then: (A) For any given pollutant, if your emissions would affect only attainment areas, no ERM will be required with respect to that pollutant beyond that which was proposed in your plan. (B) If your emissions affect any non-attainment area for a specific pollutant, the Regional

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				Supervisor may require the implementation of other ERM for that pollutant in lieu of operational controls or equipment replacement(s) as a condition of approving your plan. For any proposed BACT, you must conduct the ERM analysis in 550.306(a)(2) and provide a description of the associated energy, environmental, and economic impacts, and other costs.
			See comments § 550.306(a)(1) above.	550.306(a)(2) - In conducting your ERM analysis, with BACT, you must: (i) Identify all available ERM including BACT relevant to the emissions of the pollutant(s) for which ERM is required; (ii) Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable emission control technology or methodology. (iii) Rank the technically feasible ERM by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided; and (iv) Evaluate the most effective ERM and document the results of your analysis; and (v) Select the ERM that is technically and economically feasible and reduces your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible ERM for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits.
	550.306(a)(1)	Identify all available control technologies relevant to the emissions of the pollutant(s) for which ERM is required;	See comments § 550.306(a)(1) above.	Identify all available control technologies relevant to the emissions of the CRITERIA pollutant(s) for which ERM is required;
	550.306(a)(2)	Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable emission control technology or methodology.	See comments § 550.306(a)(1) above.	Determine which of these options are technically feasible for your plan; a demonstration of technical infeasibility must be clearly documented and must show, based on physical, chemical or engineering principles, that technical difficulties would preclude the successful use of the applicable emission control technology or methodology.
	550.306(a)(3)	Rank the technically feasible control technologies by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided;	See comments § 550.306(a)(1) above.	Rank the technically feasible control technologies by their emission control efficiencies (ECE) and determine their likely reduction of criteria air pollutant emissions (i.e., absolute effectiveness), in tpy of emissions avoided;
	550.306(a)(4)	Evaluate the most effective ERM and document the results of your analysis; and	See comments § 550.306(a)(1) above.	Evaluate the most effective ERM and document the results of your analysis; and
	550.306(a)(5)	Select reasonable operational controls or replacement(s) of equipment that are technically and economically feasible and that are designed to limit your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible operational controls or replacement(s) of equipment for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits.	See comments § 550.306(a)(1) above.	Select reasonable operational controls or replacement(s) of equipment that are technically and economically feasible and that are designed to limit your facility's projected emissions to the greatest practicable extent, taking into consideration the effectiveness and the cost of implementation, for each option considered. You must demonstrate that you have chosen the most effective technically and economically feasible operational controls or replacement(s) of equipment for every pollutant requiring such controls that can be implemented cost effectively. As an alternative, you may propose an equivalent reduction through the use of emissions credits.
	550.306(a)(6)	If you can demonstrate to the satisfaction of the Regional Supervisor that no technically feasible operational controls or equipment replacement(s) can be implemented cost effectively, then: (i) For any given pollutant, if your emissions would affect only attainment areas, no ERM will be required with respect to that pollutant beyond that which was proposed in your plan. (ii) If your emissions affect any non-attainment area for a specific pollutant, the Regional Supervisor may require the implementation of other ERM for that pollutant in lieu of operational controls or equipment replacement(s) as a condition of approving your plan. For any proposed BACT, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.	See comments § 550.306(a)(1) above.	If you can demonstrate to the satisfaction of the Regional Supervisor that no technically feasible operational controls or equipment replacement(s) can be implemented cost effectively, then: (i) For any given pollutant, if your emissions would affect only attainment areas, no ERM will be required with respect to that pollutant beyond that which was proposed in your plan. (ii) If your emissions affect any non-attainment area for a specific pollutant, the Regional Supervisor may require the implementation of other ERM for that pollutant in lieu of operational controls or equipment replacement(s) as a condition of approving your plan. For any proposed BACT, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.

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	550.306(b)	Unless you demonstrate to the satisfaction of the Regional Supervisor that no technically feasible control technology can be implemented cost effectively, your plan must include:	We request that § 550.306(b) through § 550.306(d) be deleted since all of these determinations should be made as part § 550.306(a)(1) & (2)	Unless you demonstrate to the satisfaction of the Regional Supervisor that no technically feasible control technology can be implemented cost effectively, your plan must include:
	550.306(b)(1)	An evaluation of the ERM you select, quantifying and verifying the emission reduction measure(s) and associated cost(s);	See comments § 550.306(b) above.	An evaluation of the ERM you select, quantifying and verifying the emission reduction measure(s) and associated cost(s);
	550.306(b)(2)	A description of how your selected operational controls or replacement(s) of equipment meet the criteria in § 550.309 for emission reduction measures; and a calculation of your revised projected emissions (or complex total emissions, where applicable), taking into account your selected operational controls or replacement(s) of equipment.	See comments § 550.306(b) above.	A description of how your selected operational controls or replacement(s) of equipment meet the criteria in § 550.309 for emission reduction measures; and a calculation of your revised projected emissions (or complex total emissions, where applicable), taking into account your selected operational controls or replacement(s) of equipment.
	550.306(c)	Upon making a commitment to apply the appropriate operational controls or replacement(s) of equipment or other ERM in lieu of operational controls or replacement(s) of equipment, BOEM may approve your plan, provided all other applicable requirements have been met.	See comments to § 550.306(b) above.	Upon making a commitment to apply the appropriate operational controls or replacement(s) of equipment or other ERM in lieu of operational controls or replacement(s) of equipment, BOEM may approve your plan, provided all other applicable requirements have been met.
	550.306(d)	In the event that BOEM obtains information or data that would indicate that your projected emissions may cause the NAAQS to be exceeded, the Regional Supervisor may require you to provide additional data, analysis, or modeling to demonstrate compliance with the NAAQS or may require that you implement additional ERM so that the NAAQS are not exceeded.	This language is unnecessary as BOEM regulation already includes other opportunities to request additional information and analyses. See provisions of § 550.308(a) below.	In the event that BOEM obtains information or data that would indicate that your projected emissions may cause the NAAQS to be exceeded, the Regional Supervisor may require you to provide additional data, analysis, or modeling to demonstrate compliance with the NAAQS or may require that you implement additional ERM so that the NAAQS are not exceeded.
What ERM are required for a long-term facility?	550.307(a)	<i>Control of emissions of VOCs from a long-term facility.</i> If any long-term facility requires ERM for VOCs under § 550.303(f), you must propose ERM for the facility. The extent of the ERM required depends on the attainment status of the State area affected by your projected emissions.	See comments to § 550.303(f)(1) above.	<i>Control of emissions of VOCs from a long-term facility.</i> If any long-term facility requires ERM for VOCs under § 550.303(f), you must propose ERM for the facility. The extent of the ERM required depends on the attainment status of the State area affected by your projected emissions.
	550.307(a)(1)	Except as provided in paragraph (3), if all the State areas potentially affected by your projected emissions of VOCs are designated as attainment areas for O ₃ and PM _{2.5} , then you must evaluate and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4) and consider all relevant ERM, excluding BACT. You must demonstrate in your plan that the ERM you propose, excluding BACT, will reduce the emissions of VOCs to the lowest practicable and reasonable rate, expressed in tpy. If you elect to propose BACT in lieu of an alternative ERM, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.	See comments to § 550.303(f)(1) above.	Except as provided in paragraph (3), if all the State areas potentially affected by your projected emissions of VOCs are designated as attainment areas for O ₃ and PM _{2.5} , then you must evaluate and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4) and consider all relevant ERM, excluding BACT. You must demonstrate in your plan that the ERM you propose, excluding BACT, will reduce the emissions of VOCs to the lowest practicable and reasonable rate, expressed in tpy. If you elect to propose BACT in lieu of an alternative ERM, you must provide a description of the associated energy, environmental, and economic impacts, and other costs.
	550.307(a)(2)	Except as provided in paragraph (a)(3) of this section, if your projected emissions of VOCs potentially affect a State coastal area designated as a non-attainment area for O ₃ or PM _{2.5} , then you must evaluate BACT and other relevant ERM and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4). You must fully reduce the projected emissions of VOCs to a level not to exceed the EET for VOCs, as calculated for your plan in accordance with § 550.303(e). If your proposed ERM are insufficient to reduce the emissions of VOCs to a level that does not exceed the EET, you must propose and apply additional ERM until such reduction is achieved. For any proposed BACT, you must provide a description of the associated energy, environmental and economic impacts, and other costs.	See comments to § 550.303(f)(1) above.	Except as provided in paragraph (a)(3) of this section, if your projected emissions of VOCs potentially affect a State coastal area designated as a non-attainment area for O ₃ or PM _{2.5} , then you must evaluate BACT and other relevant ERM and propose ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4). You must fully reduce the projected emissions of VOCs to a level not to exceed the EET for VOCs, as calculated for your plan in accordance with § 550.303(e). If your proposed ERM are insufficient to reduce the emissions of VOCs to a level that does not exceed the EET, you must propose and apply additional ERM until such reduction is achieved. For any proposed BACT, you must provide a description of the associated energy, environmental and economic impacts, and other costs.
	550.307(a)(3)	<i>POC waiver:</i> If your projected emissions of VOCs potentially affect a State coastal area but you can demonstrate that your VOCs will not cause an increase, or would cause a reduction, in the formation of O ₃ (i.e., reduce the O ₃ production efficiency), then no ERM are required for those VOCs.	As discussed in Section 8.5 of our comments we support the concept of NOx and VOC waivers. Should BOEM retain NOx and VOC waivers as part of the rule, it would be useful to provide an example of a waiver analysis for an OCS source via an NTL.	N/A
	550.307(b)	<i>Control of emissions of criteria air pollutants from a long-term facility.</i> If a long-term facility requires ERM for criteria air pollutants under § 550.305, then you must propose ERM and conduct modeling as specified below. The objectives of your proposal, and the extent to which additional requirements may apply, depend on the attainment status of the affected State area(s).	Requested clarification added to be consistent with the proposed new coastal areas definition add in § 550.302(b).	<i>Control of emissions of criteria air pollutants from a long-term facility.</i> If a long-term facility requires ERM for criteria air pollutants under § 550.305, then you must propose ERM and conduct modeling as specified below. The objectives of your proposal, and the extent to which additional requirements may apply, depend on the attainment status of the affected State coastal area(s).

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	550.307(b)(1)	If all State areas affected by your emissions are designated as attainment areas, then:	See comments to § 550.307(b) above.	If all State coastal areas affected by your emissions are designated as attainment areas, then:
	550.307(b)(1)(i)	You must consider all relevant ERM excluding BACT, utilizing the process described for a short-term facility in § 550.306(a)(1) through (4).	See comments to § 550.306(a)(1) above.	You must consider all relevant ERM excluding BACT , utilizing the process described for a short-term facility in § 550.306(a)(1)(i) through (v)(4).
	550.307(b)(1)(ii)	You must conduct modeling for all of the air pollutants set out in the table at 40 CFR 52.21(c) using the reduced projected emissions that result from your proposed ERM. If photochemical models are required under § 550.304, then you must also perform photochemical modeling and add the results of those models to the results of the subsequent model results.	See response to § 550.304(b)(1) above. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants. Finally, it is requested that this requirement be amended to clarify that modeling requirements would only apply to criteria air pollutants that are still above the EET after using the reduced projected emission levels.	You must conduct modeling for all of the criteria air pollutants set out in the table at 40 CFR 52.21(c) 40 CFR part 50, above the EET using the reduced projected emissions that result from your proposed ERM reductions under 550.307(b)(1)(i). If photochemical models are required under § 550.304, then you must also perform photochemical modeling and add the results of those models to the results of the subsequent model results.
	550.307(b)(1)(iii)	You must combine the ambient air concentrations resulting from the projected emissions of each relevant CP with those emissions of the same CP from other onshore and offshore sources which contribute to the consumption of the maximum allowable increases above the baseline concentration for each pollutant and baseline area as established in 40 CFR 52.21. Compare your results with the AAls applicable to the Class area designation of the State area set out in table 40 CFR 52.21(c). (A) For this analysis, use the ambient air quality concentration data specified in § 550.304(c)(2). (B) As an alternative, you may instead model only the increment-related emissions increases and decreases between the baseline date and the modeling date (using emissions inventory data) for all relevant onshore and offshore sources, combined, and then compare the resulting modeled concentration change to the appropriate increment value, without regard to ambient background concentrations.	The requested changes to this provision will ensure consistency with other changes discussed previously.	You must combine the ambient air concentrations resulting from the projected emissions of each relevant CP with appropriate background concentrations for that CP from other onshore and offshore sources which contribute to the consumption of the maximum allowable increases above the baseline concentration for each pollutant and baseline area as established in 40 CFR 52.21. Compare your results with the NAAQSAs applicable to the Class area designation of the State area set out in table 40 CFR 52.21(c) 40 CFR part 50. (A) For this analysis, use the ambient air quality concentration data specified in § 550.304(c)(2). (B) As an alternative, you may instead model only the increment-related emissions increases and decreases between the baseline date and the modeling date (using emissions inventory data) for all relevant onshore and offshore sources, combined, and then compare the resulting modeled concentration change to the appropriate increment value, without regard to ambient background concentrations.
	550.307(b)(1)(iv)	If your projected emissions affect State areas with multiple class area designations, then you must reduce your projected emissions to meet the AAls set out in the table in 40 CFR 52.21(c), according to the requirements for each class area.	See comments to § 550.307(b)(1)(iii) above.	If your projected emissions and background concentration data affect State onshore coastal areas with multiple class area designations, then you must reduce your projected emissions to meet the NAAQSAs set out in the table in 40 CFR 52.21(c) 40 CFR part 50, according to the requirements for each class area.
	550.307(b)(1)(v)	If your proposed ERM are sufficient to reduce projected emissions, such that projected concentrations do not exceed any of the AAls, you must then conduct the analysis described in § 550.307(b)(1)(vi). If your modeling results exceed the AAL for any given air pollutant, then you must continue to apply additional ERM to sources to reduce that pollutant until additional modeling confirms that your projected concentrations do not exceed any AAL. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).	See comments to § 550.307(b)(1)(iii) above.	If your proposed reductions under 550.307(b)(1)(i) ERM are sufficient to reduce projected emissions, such that projected design concentrations do not exceed the relevant CP NAAQS no additional modeling or ERM analyses are required any of the AAls, you must then conduct the analysis described in § 550.307(b)(1)(vi). If your modeling results exceed the NAAQSAs for any given air pollutant, then you must continue to apply additional ERM to sources to reduce that pollutant until additional modeling confirms that your projected concentrations do not exceed any NAAQSAs. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).
	550.307(b)(1)(vi)	You must conduct additional modeling, adding the appropriate background concentrations defined under § 550.302 and specified in § 550.304(c)(2) to your results, in order to determine the relevant design concentrations. You must compare the design concentrations for each criteria air pollutant with the NAAQS set out in 40 CFR part 50. If any of the NAAQS is exceeded for any air pollutant for any period of exposure, then you must propose additional ERM, and repeat the corresponding modeling, until you can demonstrate that your design concentrations do not exceed the NAAQS.	Request to delete unnecessary language as this requirement is addressed in § 550.307(b)(1)(v) above.	You must conduct additional modeling, adding the appropriate background concentrations defined under § 550.302 and specified in § 550.304(c)(2) to your results, in order to determine the relevant design concentrations. You must compare the design concentrations for each criteria air pollutant with the NAAQS set out in 40 CFR part 50. If any of the NAAQS is exceeded for any air pollutant for any period of exposure, then you must propose additional ERM, and repeat the corresponding modeling, until you can demonstrate that your design concentrations do not exceed the NAAQS.
	550.307(b)(2)	If your emissions affect any area designated as a non-attainment area, then you must evaluate BACT and other relevant ERM utilizing the process described for a short-term facility in § 550.306(a)(1) through (4) and consider all relevant ERM, including BACT. You must reduce the ambient impact of your emissions of all criteria air pollutants to a level that does not exceed the applicable SILs at 40 CFR 51.165(b)(2). You must conduct modeling using your revised projected emissions and compare the results with the SILs. If photochemical modeling is required under § 550.304, then you must also perform additional photochemical modeling and combine the results of that modeling with the results of the subsequent dispersion models. If your results exceed any SIL for any criteria air pollutant for any averaging time, then you must apply additional ERM until additional modeling demonstrates that all projected emissions	The requested changes to this provision will ensure consistency with other changes discussed previously.	If your emissions affect any coastal area designated as a non-attainment area, then you must evaluate BACT and other relevant ERM utilizing the process described for a short-term facility in § 550.306(a)(2)(i) through (v)(4) and consider all relevant ERM, including BACT. You must reduce the ambient impact of your emissions of all criteria air pollutants to a level that does not exceed the applicable SILs at 40 CFR 52.21(c) 40 CFR part 50. You must conduct modeling using your revised projected emissions and compare the results with the SILs. If photochemical modeling is required under § 550.304, then you must also perform additional photochemical modeling and combine the results of that modeling with the results of the subsequent dispersion models. If your results exceed any SIL for any criteria air pollutant for any averaging time, then you must apply additional ERM until additional modeling demonstrates that all projected emissions have been fully reduced so that no SIL is exceeded for any criteria air pollutant over any applicable averaging time. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).

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		have been fully reduced so that no SIL is exceeded for any criteria air pollutant over any applicable averaging time. Having done this, you must then conduct the analysis described in § 550.307(b)(1)(vi).		
	550.307(c)(1)	<i>Exceptions to the ERM requirement:</i> (1) AAIs. For any averaging time other than an annual period, a facility's projected emissions may cause an ambient impact that exceeds an applicable AAI one time during any rolling 12-month period for any given criteria air pollutant at any one location and still be considered to have fully reduced emissions.	We request this provision be deleted to be consistent with the removal of AAI provisions as discussed previously.	Exceptions to the ERM requirement: (1) AAIs. For any averaging time other than an annual period, a facility's projected emissions may cause an ambient impact that exceeds an applicable AAI one time during any rolling 12-month period for any given criteria air pollutant at any one location and still be considered to have fully reduced emissions.
	550.307(c)(2)	NO _x Waiver: If your projected emissions of NO _x potentially affect a State coastal area, but you can demonstrate that those emissions would not cause an increase, or would cause a reduction, in the formation of O ₃ (i.e., reduce the O ₃ production efficiency), then no ERM are required for NO _x , unless: (i) The potentially affected area is an attainment area for NO _x and your analysis indicates that the AAIs for NO _x would be exceeded in the absence of such ERM; or (ii) The potentially affected area is a non-attainment area for NO _x .	As discussed in Section 8.5 of our comments we support the concept of NO _x and VOC waivers. Should BOEM retain NO _x and VOC waivers as part of the rule, it would be useful to provide an example of a waiver analysis for an OCS source.	NO _x Waiver: If your projected emissions of NO _x potentially affect a State onshore coastal area, but you can demonstrate that those emissions would not cause an increase, or would cause a reduction, in the formation of O ₃ (i.e., reduce the O ₃ production efficiency), then no ERM are required for NO _x , unless: (i) The potentially affected area is an attainment area for NO _x and your analysis indicates that the AAIs for NO _x would be exceeded in the absence of such ERM; or (ii) The potentially affected area is a non-attainment area for NO _x .
	550.307(c)(3)	VOC Waiver. A VOCs waiver could apply, as described in § 550.307(a)(3).	No comments regarding this paragraph.	N/A
	550.307(c)(4)	Safety exception. If the implementation of a plan under these regulations would compromise the safety of the operation of the facility, and such implementation of any air quality standards or benchmarks cannot be otherwise addressed, then BOEM may waive the requirement to apply ERM.	We support this citation and request that it be included in the definition of ERM to highlight from the start of the analysis.	Safety exception. If the implementation of a plan under these regulations Subpart C would compromise the safety of the operation of the facility, and such implementation of any air quality standards or benchmarks cannot be otherwise addressed, then BOEM may waive the requirement to apply ERM.
	550.307(d)	NAAQs requirement. No concentration of an air pollutant may exceed the concentration permitted under any primary or secondary NAAQS.	As discussed in Section 9.2 of our comments this provision is unreasonable and would essentially require OCS sources to completely offset their emissions if modelled impacts were shown to impact a nonattainment area even if the OCS source's impact is insignificantly small. Therefore, we request that this provision be deleted.	NAAQs requirement. No concentration of an air pollutant may exceed the concentration permitted under any primary or secondary NAAQS.
	550.307(e)	Emissions credits. You may propose to use emissions credits to achieve the equivalent reduction of emissions for any criteria air pollutant as an alternative to any other ERM, regardless of the attainment status of the State area affected by your potential emissions.	In concept, this emissions credit provision provides benefit to the OCS operators. However, because BOEM has not established any specific emission credit regulatory requirements and states do not generally have banking systems for areas designated as attainment, the usefulness of the emissions credit program is significantly limited and would be burdensome to implement solely on a case-by-case basis. See Section 7 of our rule comments for additional information.	<i>Emissions credits.</i> You may propose to use emissions credits to achieve the equivalent reduction of emissions for any criteria air pollutant as an alternative to any other ERM, regardless of the attainment status of the State coastal area affected by your potential emissions.
Under what circumstances will BOEM require additional ERM on my proposed facility or facilities?	550.308(a)	<i>Regional Supervisor review.</i> You may be required to apply additional ERM, on either a temporary or permanent basis, depending on the circumstances, even though you have demonstrated compliance with the sections above, if BOEM determines that your projected emissions or, where applicable, complex total emissions, may cause or contribute to a violation of a NAAQS. The Regional Supervisor may make this determination based on:	As discussed in Section 1.5.1 of our comments, BOEM's inclusion of provision that would allow the Regional Supervisor to simply ignore the entire proposed regulatory scheme, make his or her own NAAQS compliance determination, and impose his or her own emission controls at will, is plainly arbitrary. Therefore, we request that these provisions be deleted.	<i>Regional Supervisor review.</i> You may be required to apply additional ERM, on either a temporary or permanent basis, depending on the circumstances, even though you have demonstrated compliance with the sections above, if BOEM determines that your projected emissions or, where applicable, complex total emissions, may cause or contribute to a violation of a NAAQS. The Regional Supervisor may make this determination based on:
	550.308(a)(1)	Information submitted by a State or local government, or a Federally-recognized Indian tribe;	See comments on § 550.308(a) above.	Information submitted by a State or part of SIP or local government, or a Federally-recognized Indian tribe;
	550.308(a)(2)	A cumulative impacts analysis conducted for an environmental impact statement (EIS) prepared to comply with the National Environmental Policy Act (NEPA);	See comments on § 550.308(a) above.	A cumulative impacts analysis conducted for an environmental impact statement (EIS) prepared to comply with the National Environmental Policy Act (NEPA);
	550.308(a)(3)	A compliance review of your proposed plan under § 550.232(b) for an EP, or § 550.267(c) for a DPP or DOCD; or	See comments on § 550.308(a) above.	A compliance review of your proposed plan under § 550.232(b) for an EP, or § 550.267(c) for a DPP or DOCD; or
	550.308(a)(4)	The declaration by an adjacent State, or the USEPA, of an air quality emergency for a location that may be affected by air emissions generated by your operations.	See comments on § 550.308(a) above.	The declaration by an adjacent State, or the USEPA, of an air quality emergency for a location that may be affected by air emissions generated by your operations.

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	550.308(b)	<i>Lessee's or operator's right to challenge.</i> You will be given notice of the Regional Supervisor's determination, as well as an opportunity to present additional information and analysis for review by the Regional Supervisor. If you present the Regional Supervisor with additional information and analysis, the Regional Supervisor will reassess whether your projected emissions, or complex total emissions, may cause or contribute to a violation of any NAAQS, and whether additional ERM will be required for your facility. The Regional Supervisor will then notify the State or local government, or Federally-recognized Indian tribe, and explain the reasons for this determination.	See comments on § 550.308(a)	Lessee's or operator's right to challenge. You will be given notice of the Regional Supervisor's determination, as well as an opportunity to present additional information and analysis for review by the Regional Supervisor. If you present the Regional Supervisor with additional information and analysis, the Regional Supervisor will reassess whether your projected emissions, or complex total emissions, may cause or contribute to a violation of any NAAQS, and whether additional ERM will be required for your facility. The Regional Supervisor will then notify the State or local government, or Federally-recognized Indian tribe, and explain the reasons for this determination.
What requirements apply to my ERM?	550.309(a)	<i>Sufficiency.</i> Your proposed ERM must be sufficient to achieve actual emissions reductions corresponding to those reported in your plan for the duration of your plan's operations under all reasonably foreseeable conditions. On a case-by-case basis, the Regional Supervisor will review your proposed ERM and make a determination whether such measures meet the applicable criteria.	We request the removal of unnecessary language as these items are already part of the plan review process.	<i>Sufficiency.</i> Your proposed ERM must be sufficient to achieve actual emissions reductions corresponding to those reported in your plan for the duration of your plan's operations under all reasonably foreseeable conditions. On a case-by-case basis, the Regional Supervisor will review your proposed ERM and make a determination whether such measures meet the applicable criteria.
	550.309(b)	<i>Effectiveness.</i> You must continually ensure the effectiveness of your ERM for the duration of your plan's operations. If your measures become disabled or unavailable, you must immediately notify the Regional Supervisor and replace such ERM with others of equal or superior effectiveness within 30 days of discovering the disability or unavailability, unless the Regional Supervisor approves an extension not to exceed 90 days.	The requested changes are proposed to improve clarity of this provision and to recognize that limiting an extension period to 90 days is unreasonable for OCS operations that typically operate in remote and harsh environments. The requirements related to "effectiveness" and "control efficiency" are suitable for emissions sources installed with BACT, but do not apply to operational controls or emissions credits. For example, an operator would not be able to demonstrate the control efficiency of operational fuel limitations. BOEM should revise these requirements to only apply to emissions sources installed with BACT.	<i>Effectiveness.</i> You must continually ensure the effectiveness of your BACT/ERM for the duration of your plan's operations. If your measures become permanently disabled or unavailable, and your emissions exceed your facility's maximum annual projected emissions as approved in your plan you must immediately notify the Regional Supervisor within 5 business days of such event and set forth a schedule for and replacing such BACT/ERM with others of equal or superior effectiveness as soon as practicable within 30 days of after discovering the disability or unavailability, unless the Regional Supervisor approves an extension not to exceed 90 days.
	550.309(c)	<i>Control efficiency.</i> Your proposed ERM must reflect actual ECE. You must substantiate any ECE that you project and provide sufficient evidence to justify your ECE to the satisfaction of the Regional Supervisor.	Substantiating actual emission control efficiency would likely require testing. As discussed in Section 7.1.1 of our comments, BOEM should outline what is required to "substantiate" ECE as part of the rulemaking, allowing operators due process to comment. Furthermore, this provision should be limited to emission sources subject to BACT or operational control limitations. Until this provision is further clarified we request that it be deleted.	Control efficiency. Your proposed ERM must reflect actual ECE. You must substantiate any ECE that you project and provide sufficient evidence to justify your ECE to the satisfaction of the Regional Supervisor.
	550.309(c)(1)	Should your substantiating data indicate a range of ECE, you must utilize the more conservative estimates (i.e., those that would result in lower ECE) in your analysis and modeling.	See comments on § 550.309(c) above.	Should your substantiating data indicate a range of ECE, you must utilize the more conservative estimates (i.e., those that would result in lower ECE) in your analysis and modeling.
	550.309(c)(2)	ECE estimates of 100 percent are generally not acceptable, except in cases where there is clear and convincing and/or historical evidence to justify their use.	See comments on § 550.309(c) above.	ECE estimates of 100 percent are generally not acceptable, except in cases where there is clear and convincing and/or historical evidence to justify their use.
	550.309(d)	<i>Emission reductions monitoring.</i> If ERM are contained in your approved plan, the Regional Supervisor may require that you provide actual emissions data and/or any other information annually that the Regional Supervisor deems necessary to verify the effectiveness of your proposed ERM or their emission control efficiency.	It is requested that this provision be updated to reflect that actual emissions monitoring would only be applicable in instances where control technology was employed as part of BACT requirements. There are already sufficient requirements under the monitoring and recordkeeping portion and GOADS to ensure compliance with operational limits.	<i>Emission reductions monitoring.</i> If ERM BACT are contained in your approved plan, the Regional Supervisor may require that you provide actual emissions data and/or any other information annually that the Regional Supervisor deems necessary to verify the effectiveness of your proposed ERM BACT or their emission control efficiency as a condition of the plan approval.
	550.309(d)(1)	If your plan is approved subject to the application of ERM, you must ensure that the emissions associated with each emissions source for which ERM is required complies with the emissions verification requirements of § 550.311. The Regional Supervisor may require that you install emissions measurement meters if the Regional Supervisor determines that such meters are necessary to ensure compliance with this requirement.	It is requested that this provision be removed because it is duplicative of § 550.311.	If your plan is approved subject to the application of ERM CONTROL TECHNOLOGY, you must ensure that the emissions associated with such emissions source for which ERM CONTROL TECHNOLOGY is required complies with the emissions verification requirements of § 550.311. The Regional Supervisor may require that you install emissions measurement meters if the Regional Supervisor determines that such meters are necessary to ensure compliance with this requirement.
	550.309(d)(2)	If you propose or are required to install emissions meters or any other monitoring equipment, you must collect and maintain monthly logs of the relevant meter or monitoring equipment readings.	See comments on § 550.309(d)(1) above. Furthermore, it is unclear what the term "emissions meters" means as it is not defined in this Subpart.	If you propose or are required to install emissions meters or any other monitoring equipment, you must collect and maintain monthly logs of the relevant meter or monitoring equipment readings.
	550.309(e)	<i>Emissions credits.</i> For emissions credits, the following requirements also apply:	No comments regarding this paragraph.	N/A
	550.309(c)(1)	You must acquire your emissions credits from emissions source(s), either offshore or onshore, that affect the air quality of the same AQCR.	See comments in § 550.307(c) above.	N/A
	550.309(c)(2)	For a CP, the emissions credits that you propose must provide a net air quality benefit for the same pollutant; for a precursor pollutant, any emissions credits that you propose must provide a net air quality benefit for that CP for which the pollutant is a	See comments in § 550.307(c) above.	N/A

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		precursor.		
	550.309(c)(3)	You must demonstrate to the Regional Supervisor that the emissions credit you propose binds you and any other parties who agree to lower their emissions.	See comments in § 550.307(c) above.	N/A
	550.309(c)(4)	You must also demonstrate that any emissions reductions will last for a period of time sufficient to ensure your plan's continued compliance with the provisions of this subpart. The Regional Supervisor may periodically require you to certify that the emissions reductions are still in place.	See comments in § 550.307(c) above.	
	550.309(c)(5)	Any emissions credits must reduce emissions below rates otherwise required by law.	See comments in § 550.307(c) above.	N/A
	550.309(c)(6)	In addition to BOEM, you must notify the appropriate State air quality control jurisdiction of your proposal to acquire emissions offsets and, if necessary, its need to revise the State Implementation Plan to include the information regarding the emissions offsets you have acquired. You must provide evidence of such State notification to BOEM before you commence any operations that rely on the associated emissions credits.	See comments in § 550.307(c) above.	N/A
	550.309(c)(7)	Emissions credits are allowed in those circumstances where BOEM can readily verify the historical emissions from the facility to be used for the emissions credit, and the emissions reduction associated with the acquired emissions credit.	See comments in § 550.307(c) above.	N/A
	550.309(c)(8)	The approval of an emissions credit will be contingent upon receipt of proper documentation and will not be granted if such an emissions credit would require BOEM to engage in ongoing monitoring to verify continued compliance.	See comments in § 550.307(c) above.	N/A
	550.309(c)(9)	Nothing in these regulations is intended to restrict emissions credits from being obtained and shared by multiple lesses or operators.	See comments in § 550.307(c) above.	N/A
	550.309(f)	<i>Emission reduction measure(s) (ERM):</i> Unless otherwise specified, you may employ any operational control, equipment replacement(s), BACT, or emissions credit, on either a temporary or permanent basis, to reduce the amount of emissions that would occur in the absence of such measures. Any proposed ERM will become a condition of your plan upon approval and could be required on either a permanent or temporary basis, depending on the circumstances and location of the proposed facilities.	No comments on this provision.	N/A
	550.309(f)(1)	In the event that you elect or are required to apply equipment replacement on a facility as the selected form of ERM, both the method of replacement and the equipment must comply with all other applicable federal regulations.	It is requested that this unnecessary language be removed. BOEM does not have authority to enforce other applicable federal regulations.	In the event that you elect or are required to apply equipment replacement on a facility as the selected form of ERM, both the method of replacement and the equipment must comply with all other applicable federal regulations.
	550.309(f)(2)	In the event that the equipment being replaced is part of an MSC subject to USCG regulation, such replacement must be implemented in such a manner as to comply with USCG regulations.	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. Furthermore, the owners of MSC's and not the operators are responsible for compliance with USCG. As such, this provision should be removed.	In the event that the equipment being replaced is part of an MSC subject to USCG regulation, such replacement must be implemented in such a manner as to comply with USCG regulations.
How will revisions to the ambient air quality standards and benchmarks (AAQSB) affect my plan?	550.310(a)	<i>Review of plans.</i> BOEM will evaluate the air pollutant emissions data submitted in your plan for compliance with the AAQSBs in effect on the date your plan is deemed submitted.	We request the following changes to increase clarity of this provision and to make the regulatory language consistent with changes previously discussed. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants.	<i>Review of plans.</i> BOEM will evaluate the criteria air pollutant emissions data submitted in your plan in accordance with the processes established in 550.303 and 550.304. for compliance with the NAAQS and SILs that are AAQSBs in effect on the date your plan is deemed submitted will be utilized (if necessary) to determine if ERMs are necessary.
	550.310(b)	<i>Proposed plans.</i> All activities described in initial, revised, modified, and supplemental plans must comply with the AAQSB in effect on the date the plan is deemed submitted, except:	See comments to § 550.310(a).	<i>Proposed plans.</i> All activities described in initial, revised, modified, and supplemental plans must comply with the NAAQS and SILs AAQSB in effect on the date the plan is deemed submitted, except:

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New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language																																																												
	550.310(b)(1)	If your plan was deemed submitted shortly after the effective date of a new or revised AAQSB, and you believe the immediate application of the new or revised AAQSB is impracticable or would otherwise impose an unreasonable hardship on your proposed operations, then you may request a deferral from the requirement to comply with the new or revised standard. The Regional Director will review your request and may with the concurrence of the Director grant a temporary deferral, not to exceed two years, from compliance with the new or revised AAQSB based upon a finding of impracticability or undue hardship.	See comments to § 550.310(a). We support the option for an operator to request a two-year deferral. Planning for new production facilities takes multiple years and unexpected changes to the AAQSB can pose significant schedule risks if the necessary DOCD approvals are delayed.	If your plan was deemed submitted shortly after the effective date of a new or revised NAAQS or SILsAAQSB, and you believe the immediate application of the new or revised NAAQS or SILsAAQSB is impracticable or would otherwise impose an unreasonable hardship on your proposed operations, then you may request a deferral from the requirement to have the air emissions evaluated utilizing the new or revised standard. The Regional Director will review your request and may with the concurrence of the Director grant a temporary deferral, not to exceed two years, from evaluations to the new or revised AAQSB based upon a finding of impracticability or undue hardship.																																																												
	550.310(b)(2)	Upon a finding that noncompliance with a new or revised AAQSB would not significantly affect the air quality of any State, the Director may grant a departure from compliance with the revised AAQSB. The Director may condition the departure upon any requirement(s) deemed necessary to avoid causing or contributing to a violation of the NAAQS.	BOEM has not explained in enough detail how this subsection could be acted upon by the Director. It is unclear how a finding of non-compliance with a new or revised NAAQS would be found to similarly not significantly affect air quality of any state. It is requested that this process be further clarified.	Upon a finding that noncompliance with a new or revised NAAQS/AAQSB would not significantly affect the air quality of any State coastal area, the Director may grant a departure from compliance with the revised NAAQS/AAQSB. The Director may condition the departure upon any requirement(s) deemed necessary to avoid causing or contributing to a violation of the NAAQS.																																																												
	550.310(c)(1)	<i>Approved plans.</i> (1) In order to ensure that your emissions remain compliant with any changes to the NAAQS, you are required to resubmit your plan for a periodic air quality review ten years after BOEM's previous approval of your plan, as further defined in paragraph (c)(2) of this section. A plan resubmitted pursuant to this provision must be updated to comply with the requirements of § 550.205 as they exist at the time of the plan resubmission, including the most current data on emissions factors and MSC emissions, and must be reevaluated against the EETs and formulas as they exist at the time of the plan resubmission. When you resubmit a plan under this provision, that plan must include estimates for the annual projected emissions for the subsequent ten years, or for however long the plan's facility or facilities would be expected to remain in operation, whichever is shorter. With respect to the emissions calculations for any given emissions source, the resubmitted plan must account for the most recent available data on the actual emissions of the relevant emission source. All of the applicable requirements of this subpart in effect on the date of resubmission apply on the same basis to a resubmitted plan as for an initial plan.	As discussed in Sections 1.3.2 and 10 of our comments, the requirement to re-submit plans every 10 years is inconsistent with section 25(b)(3) of OCSLA, which indicates that BOEM can only review an existing plan "based upon changes in available information and other onshore or offshore conditions affecting or impacted by development and production pursuant to such plan." 43 U.S.C. § 1351(b)(3).	<i>Approved plans.</i> (1) In order to ensure that your emissions remain compliant with any changes to the NAAQS, you are required to resubmit your plan for a periodic air quality review ten years after BOEM's previous approval of your plan, as further defined in paragraph (c)(2) of this section. A plan resubmitted pursuant to this provision must be updated to comply with the requirements of § 550.205 as they exist at the time of the plan resubmission, including the most current data on emissions factors and MSC emissions, and must be reevaluated against the EETs and formulas as they exist at the time of the plan resubmission. When you resubmit a plan under this provision, that plan must include estimates for the annual projected emissions for the subsequent ten years, or for however long the plan's facility or facilities would be expected to remain in operation, whichever is shorter. With respect to the emissions calculations for any given emissions source, the resubmitted plan must account for the most recent available data on the actual emissions of the relevant emission source. All of the applicable requirements of this subpart in effect on the date of resubmission apply on the same basis to a resubmitted plan as for an initial plan.																																																												
	550.310(c)(2)	In order to ensure that your emissions remain compliant with OCSLA, starting in 2020, BOEM will conduct periodic reviews of plans approved prior to the effective date of the new exemption thresholds. To accomplish this, from that year forward, you must submit the air quality component of your previously approved plan according to the following schedule, regardless of whether you have a change in emissions. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year the Plan was Approved</th> <th>Year in Which Resubmission is Required</th> </tr> </thead> <tbody> <tr><td>Prior to 1980</td><td>2020</td></tr> <tr><td>1980 through 1984</td><td>2021</td></tr> <tr><td>1985 through 1989</td><td>2022</td></tr> <tr><td>1990 through 1994</td><td>2023</td></tr> <tr><td>1995 through 1999</td><td>2024</td></tr> <tr><td>2000 through 2004</td><td>2025</td></tr> <tr><td>2005 through 2009</td><td>2026</td></tr> <tr><td>2010 through 2012</td><td>2027</td></tr> <tr><td>2013 through 2014</td><td>2028</td></tr> <tr><td>2015 through 2016</td><td>2029</td></tr> <tr><td>2017 through 2018</td><td>2030</td></tr> <tr><td>2019 through 2020</td><td>2031</td></tr> <tr><td>2021 through 2022</td><td>2032</td></tr> <tr><td>2023 and beyond</td><td>Ten years after year of approval</td></tr> </tbody> </table>	Year the Plan was Approved	Year in Which Resubmission is Required	Prior to 1980	2020	1980 through 1984	2021	1985 through 1989	2022	1990 through 1994	2023	1995 through 1999	2024	2000 through 2004	2025	2005 through 2009	2026	2010 through 2012	2027	2013 through 2014	2028	2015 through 2016	2029	2017 through 2018	2030	2019 through 2020	2031	2021 through 2022	2032	2023 and beyond	Ten years after year of approval	See comment to § 550.310(c)(1) above.	In order to ensure that your emissions remain compliant with OCSLA, starting in 2020, BOEM will conduct periodic reviews of plans approved prior to the effective date of the new exemption thresholds. To accomplish this, from that year forward, you must submit the air quality component of your previously approved most recently approved supplemental or revised plan according to the following schedule, regardless of whether you have a change in emissions. Delete Table below. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year the Plan was Approved</th> <th>Year in Which Resubmission is Required</th> </tr> </thead> <tbody> <tr><td>Prior to 1980</td><td>2020</td></tr> <tr><td>1980 through 1984</td><td>2021</td></tr> <tr><td>1985 through 1989</td><td>2022</td></tr> <tr><td>1990 through 1994</td><td>2023</td></tr> <tr><td>1995 through 1999</td><td>2024</td></tr> <tr><td>2000 through 2004</td><td>2025</td></tr> <tr><td>2005 through 2009</td><td>2026</td></tr> <tr><td>2010 through 2012</td><td>2027</td></tr> <tr><td>2013 through 2014</td><td>2028</td></tr> <tr><td>2015 through 2016</td><td>2029</td></tr> <tr><td>2017 through 2018</td><td>2030</td></tr> <tr><td>2019 through 2020</td><td>2031</td></tr> <tr><td>2021 through 2022</td><td>2032</td></tr> <tr><td>2023 and beyond</td><td>Ten years after year of approval</td></tr> </tbody> </table>	Year the Plan was Approved	Year in Which Resubmission is Required	Prior to 1980	2020	1980 through 1984	2021	1985 through 1989	2022	1990 through 1994	2023	1995 through 1999	2024	2000 through 2004	2025	2005 through 2009	2026	2010 through 2012	2027	2013 through 2014	2028	2015 through 2016	2029	2017 through 2018	2030	2019 through 2020	2031	2021 through 2022	2032	2023 and beyond	Ten years after year of approval
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	550.310(c)(2)(i)	The plan is due to BOEM on the same month as the month in which the plan was originally approved.	See comment to § 550.310(c)(1) above.	The plan is due to BOEM on the same month as the month in which the plan was originally most recently approved.																																																												

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	550.310(c)(2)(ii)	For an initially approved plan, the lessee or operator is required to resubmit the plan in accordance with the table in paragraph (c)(2) of this section.	See comment to § 550.310(c)(1) above.	For an initially approved plan, the lessee or operator is required to resubmit the plan in accordance with the table in paragraph (c)(2) of this section.
	550.310(c)(2)(iii)	If a revised, modified, resubmitted, or supplemental plan is submitted within ten years from the date of the initial plan submittal, the new resubmission date would be ten years from the date of approval of the revised, modified, resubmitted, or supplemental plan.	See comment to § 550.310(c)(1) above.	If a revised, modified, resubmitted, or supplemental plan is submitted within ten years from the date of the initial plan submittal, the new resubmission date would be ten years from the date of approval of the revised, modified, resubmitted, or supplemental plan.
	550.310(c)(2)(iv)	If you fail to submit a revised plan as required under this section, then the previous approval of your plan is revoked. You may be subject to civil penalties or other appropriate sanctions for a regulatory violation, including the requirement to cease operations, as provided by 43 U.S.C. 1350.	See comment to § 550.310(c)(1) above.	If you fail to submit a revised plan as required under this section, then the previous approval of your plan is revoked. You may be subject to civil penalties or other appropriate sanctions for a regulatory violation, including the requirement to cease operations, as provided by 43 U.S.C. 1350.
<i>Under what circumstances will I be required to measure and report my actual emissions?</i>	550.311(a)	<i>Compliance demonstration conditions.</i> Under any of the following conditions, you must demonstrate that your actual emissions have at all times and continue to be in compliance with your previously approved plan:	It is requested that the unnecessary language be removed from this provision.	<i>Compliance demonstration conditions.</i> Under any of the following conditions, you must demonstrate that your actual emissions are in compliance with your previously approved plan:
	550.311(a)(1)	Your plan is approved subject to the implementation of BACT or emissions credits.	It is requested that BOEM limit monitoring of actual emission to sources equipped with control technology required as part of BACT review.	Your plan is approved subject to the implementation of BACT or emissions credits.
	550.311(a)(2)	Any emission source on your facility uses an engine that is not certified by the USEPA consistent with the requirements of 40 CFR 1042 or 40 CFR 1043, for U.S.-flag vessels, or that is not certified to the MARPOL Annex VI Regulation 13 requirements as required by the Act to Prevent Pollution from Ships, for foreign-flag vessels operating in the U.S.	See comment to § 550.311(a)(1) above.	Any emission source on your facility uses an engine that is not certified by the USEPA consistent with the requirements of 40 CFR 1042 or 40 CFR 1043, for U.S.-flag vessels, or that is not certified to the MARPOL Annex VI Regulation 13 requirements as required by the Act to Prevent Pollution from Ships, for foreign-flag vessels operating in the U.S.
	550.311(a)(3)	The Regional Supervisor determines that your projected emissions, or complex total emissions, for any criteria or precursor air pollutant, calculated on either an annual basis or on the basis of a 12-month rolling sum, may significantly underestimate your actual emissions based either on historical data about your emissions sources or on ambient air monitoring.	See comment to § 550.311(a)(1) above.	The Regional Supervisor determines that your projected emissions, or complex total emissions, for any criteria or precursor air pollutant, calculated on either an annual basis or on the basis of a 12-month rolling sum, may significantly underestimate your actual emissions based either on historical data about your emissions sources or on ambient air monitoring.
	550.311(a)(4)	BOEM determines that your facility causes or contributes to an exceedance of the NAAQS in any State.	The requested change is proposed to provide additional clarity to this provision.	BOEM Regional Supervisor determines that your facility causes or contributes to an exceedance of the NAAQS in any State.
	550.311(b)	<i>Emissions reporting requirements.</i> If you are required to make the demonstration described in this section:	No comments on this provision.	N/A
	550.311(b)(1)	Your measurement of actual emissions must include enough of your emissions sources to ensure that the actual emissions associated with facilities and MSCs operating under your approved plan are consistent with the projected emissions approved for your plan. You must consider every source that was included in your approved plan in addition to any source that would be classified as part of your projected emissions if your plan were resubmitted under the current regulations.	As discussed in Section 11.2 of our comments BOEM should limit the monitoring of actual emissions to emission sources installed with BACT. It would be more appropriate for the operators to propose which specific sources will be monitored as part of plan submittals as already required by 550.205(k). Additionally, as explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. Therefore, we request that this provision be deleted.	Your measurement of actual emissions must include enough of your emissions sources to ensure that the actual emissions associated with facilities and MSCs operating under your approved plan are consistent with the projected emissions approved for your plan. You must consider every source that was included in your approved plan in addition to any source that would be classified as part of your projected emissions if your plan were resubmitted under the current regulations.
	550.311(b)(2)	BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment:	See comment to § 550.311(b)(1) above.	BOEM will consider various alternatives for reporting of relevant emissions sources. One option would be to monitor only the following key pieces of equipment:
	550.311(b)(2)(i)	For facilities, the required monitoring and reporting of engines would typically include: (A) Onboard facility engines; (B) Power generation engines; (C) Hydraulic power units (HPU) engines; (D) Deck cranes; (E) Cementing units; (F) Engines with a maximum power rating exceeding 200 hp (149 kW).	See comment to § 550.311(b)(1) above.	For facilities, the required monitoring and reporting of engines would typically include: (A) Onboard facility engines; (B) Power generation engines; (C) Hydraulic power units (HPU) engines; (D) Deck cranes; (E) Cementing units; (F) Engines with a maximum power rating exceeding 200 hp (149 kW).
	550.311(b)(2)(ii)	For facilities, monitoring and reporting would typically exclude: (A) Propulsion engines; (B) Boilers and incinerators; (C) Emergency generators; (D) Lifeboat engines.	See comment to § 550.311(b)(1) above.	For facilities, monitoring and reporting would typically exclude: (A) Propulsion engines; (B) Boilers and incinerators; (C) Emergency generators; (D) Lifeboat engines.

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	550.311(b)(2)(iii)	For MSCs the sources, monitoring and reporting would likely include: (A) Propulsion engines; (B) Power generation engines; (C) Marine auxiliary engines; or (D) Engines with a maximum power rating exceeding 200 hp (149 kW).	See comment to § 550.311(b)(1) above.	For MSCs the sources, monitoring and reporting would likely include: (A) Propulsion engines; (B) Power generation engines; (C) Marine auxiliary engines; or (D) Engines with a maximum power rating exceeding 200 hp (149 kW).
	550.311(b)(2)(iv)	MSCs monitoring and reporting would typically exclude boilers and incinerators, emergency generators, and any engines onboard science vessels, OSVs, or lifeboats.	See comment to § 550.311(b)(1) above.	MSCs monitoring and reporting would typically exclude boilers and incinerators, emergency generators, and any engines onboard science vessels, OSVs, or lifeboats.
	550.311(b)(3)	Your demonstration must reflect your actual operations on the OCS and must be based exclusively on data derived from your actual equipment and not only on the basis of ECEs or fuel logs or activity data.	See comment to § 550.311(b)(1) above.	Your demonstration must reflect your actual operations on the OCS and must be based exclusively on data derived from your actual equipment and not only on the basis of ECEs or fuel logs or activity data.
	550.311(b)(4)	You must be able to demonstrate that the data submitted to BOEM under this section is consistent with any data provided to BOEM under the requirements of § 550.187.	See comment to § 550.311(b)(1) above.	You must be able to demonstrate that the data submitted to BOEM under this section is consistent with any data provided to BOEM under the requirements of § 550.187.
	550.311(b)(5)	You must provide the information required for this demonstration in a manner and on a schedule determined by the Regional Supervisor.	See comment to § 550.311(b)(1) above.	You must provide the information required for this demonstration in a manner and on a schedule determined by the Regional Supervisor.
	550.311(c)	<i>Notification requirements.</i> If, on the basis of your demonstration of actual emissions, you determine at any time your actual emissions exceed your projected emissions for any pollutant you must notify BOEM and provide BOEM with the appropriate data regarding the exceedance.	As BOEM has greatly expanded the number of emissions sources that have to be identified in the plan submittal, each additional source represents a potential whereby actual emissions of the emission source could exceed its projected emissions. If BOEM expects this level of granularity, the administrative burden on operators is substantial. We request that notifications of an exceedance of projected emissions be based on the sum of the entire facility annual emissions.	<i>Notification requirements.</i> If, on the basis of your demonstration of actual emissions, you determine at any time your facility's actual annual emissions exceed your projected annual emissions as described in your plan for any pollutant you must notify BOEM and provide BOEM with the appropriate data regarding the exceedance.
	550.311(d)	<i>Data submittal requirements.</i> You must submit data and information in a format, and using the forms as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method authorized by BOEM.	It is requested that OCS operators be provided an opportunity to review and comment on any forms that may be implemented through the formal rule making process.	<i>Data submittal requirements.</i> You must submit data and information in a standard format, and using the forms as specified by BOEM. You must submit information in an electronically-readable format, unless otherwise directed by the Regional Supervisor. If you transmit the information to BOEM electronically, you must use a delivery medium or transmission method authorized by BOEM.
<i>What post-approval recordkeeping and reporting is required?</i>	550.312(a)	<i>Stack testing.</i> If stack testing was used as a method to develop your emissions factors under § 550.205 or was used to develop any of the other information submitted pursuant to that section, then you must conduct the stack testing every three years and report the results, utilizing the General Provisions for Determining Standards of Performance for New Stationary Sources, Available at 40 CFR 60.8.	In most onshore permits and stack test provisions in federal standards, stack testing is limited to major emissions units and is limited to only initial testing or testing if modifications to the equipment are undertaken. Stack testing is far more complicated offshore than onshore due to safety considerations and space constraints, and should be limited accordingly. Considering the remoteness of the OCS facilities, and the safety considerations and space constraints, stack testing, at most, should be required only for the largest emissions units at a facility and then only initially or after significant modifications to the emissions unit that would make the previous testing invalid. Therefore, we request that this provision be modified to eliminate the requirement to repeat testing every three years. Furthermore, we request the removal of the reference to 40 CFR 60.8 as this provision does not specify the reporting requirements associated with stack testing.	<i>Stack testing.</i> If stack testing was used as a method to develop your emissions factors under § 550.205 or was used to develop any of the other information submitted pursuant to that section, then you must conduct the stack testing every three years and report the results, utilizing the General Provisions for Determining Standards of Performance for New Stationary Sources, Available at 40 CFR 60.8.
	550.312(b)	<i>Fuel logs and activity data.</i> In order to demonstrate compliance with your plan, you must retain information on monthly fuel consumption, for each emissions source, including attributed emissions sources, showing the quantity, type, and sulphur content of fuel used; collect facility and equipment usage information, including hours of operation at each percent of capacity for each emissions source. Venting, flaring, flashing and any other release of any air pollutant emissions that would not otherwise be accounted for by fuel consumption must be reported for any emissions source that generates criteria air pollutants or precursor air pollutants in connection with OCS activities.	As discussed in Section 11.4 of our comments the implementation of individual engine and emission source fuel or activity data monitoring is extremely costly and the benefits do not outweigh the costs. We request that BOEM revise these requirements to apply only to substantial emissions sources.	<i>Fuel logs and activity data.</i> In order to demonstrate compliance with your plan, you must retain information on monthly fuel consumption, for each emissions source, including attributed emissions sources, showing the quantity, type, and sulphur content of fuel used; collect facility and equipment usage information, including hours of operation at each percent of capacity for each emissions source. Venting, flaring, flashing and any other release of any air pollutant emissions that would not otherwise be accounted for by fuel consumption must be reported for any emissions source that generates criteria air pollutants or precursor air pollutants in connection with OCS activities.
	550.312(b)(1)	You must retain this information for a period of no less than ten years. You must submit this information to BOEM on a schedule set by the Regional Director.	A ten-year recordkeeping requirement is unprecedented, as EPA and States require facilities to retain information for periods ranging between two and five years. BOEM did not explain its basis for selecting a ten year period or why a facility must continue to keep copies of information for such a lengthy time when it already provides this information to BOEM on a periodic basis. Therefore, it is requested that the recordkeeping time period be reduced to five years or the life of the plan, whichever is less.	You must retain this information for a period of no less than ten years five years or the life of your plan, whichever is less. You must submit this information to BOEM on a schedule set by the Regional Director.

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	550.312(b)(2)	If BOEM obtains the relevant data for your attributed emissions from an independent third party, then the Regional Supervisor may waive the requirement to submit fuel logs or collect facility and equipment usage information for MSCs.	As explained in Section 1.2.4 of our comments, BOEM does not have the authority to regulate MSCs. As such, this provision should be removed.	If BOEM obtains the relevant data for your attributed emissions from an independent third party, then the Regional Supervisor may waive the requirement to submit fuel logs or collect facility and equipment usage information for MSCs.
	550.312(b)(3)	<i>Electronic Records.</i> Record-keeping and reporting must be consistent with the USEPA's requirements for electronic reporting and recordkeeping requirements for new source performance standards.	It is requested that BOEM separate its reporting requirements from those of EPA. Adopting parts of the NSPS will create confusion and inconsistency in reporting.	<i>Electronic Records.</i> Record-keeping and reporting must be consistent with the BOEM'S USEPA's standard requirements for electronic reporting and recordkeeping requirements for new source performance standards.
	550.312(c)	<i>Meteorological reporting.</i> The Regional Supervisor may require, for a period of time and in a manner approved or prescribed, that you collect and report meteorological data from any of your facilities. The Regional Supervisor may allow you to substitute facility-specific data for meteorological data derived from any other mutually agreed upon location.	As discussed in Section 1.5.2 of our comments, this proposed provision fails to inform the regulated community of what is required and consequently establishes a framework for rulemaking without due process. This provision must be sufficiently clear and specific so the regulated community has "fair notice" of the regulatory requirements. As such, it is requested that this provision be deleted as currently written.	<i>Meteorological reporting.</i> The Regional Supervisor may require, for a period of time and in a manner approved or prescribed, that you collect and report meteorological data from any of your facilities. The Regional Supervisor may allow you to substitute facility-specific data for meteorological data derived from any other mutually agreed upon location.
	550.312(d)	<i>Other information.</i> Notwithstanding any other provision within this subpart, the Regional Supervisor may require you to provide any other information within your possession, or otherwise reasonably obtainable, to support any finding or determination under this subpart.	This provision is ambiguous and unclear and it is requested to be removed from the rule.	<i>Other information.</i> Notwithstanding any other provision within this subpart, the Regional Supervisor may require you to provide any other information within your possession, or otherwise reasonably obtainable, to support any finding or determination under this subpart.
	550.312(e)	<i>Additional requirements imposed by other agencies.</i> None of the provisions of this section would prevent the imposition of additional monitoring or reporting requirements on the part of BSEE or any other federal agency.	It is requested that this provision be deleted as additional monitoring and reporting requirements imposed by other agencies are not relevant to BOEM's authority and do not belong in this regulation.	<i>Additional requirements imposed by other agencies.</i> None of the provisions of this section would prevent the imposition of additional monitoring or reporting requirements on the part of BSEE or any other federal agency.
Under what circumstances will BOEM impose additional requirements on facilities operating under already approved plans?	550.313(a)	BOEM may impose additional air quality requirements on facilities operating under already approved plans if an applicable AAQSB changes or if BOEM determines:	As discussed in Section 1.5.1 of our comments, we request that the provisions of § 550.313 be deleted in its entirety or rewritten to provide much need clarification and ensure that the statutory authority of section 5(a)(8) of OCSLA is not exceeded.	BOEM may impose additional air quality requirements on facilities operating under already approved plans if an applicable AAQSB changes or if BOEM determines:
	550.313(a)(1)	Your operations are causing or contributing to a violation of the NAAQS, either individually or in combination with any other offshore operations;	See comment to § 550.313(a) above.	Your operations are causing or contributing to a violation of the NAAQS, either individually or in combination with any other offshore operations;
	550.313(a)(2)	Your plan was approved with either a NO _x waiver or a VOC waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x or VOCs would contribute to an increase in the ambient O ₃ concentration such that the NAAQS for O ₃ may be exceeded (in an attainment area), or the NAAQS for O ₃ would continue to be exceeded (in an area that is non-attainment for O ₃).	See comment to § 550.313(a) above.	Your plan was approved with either a NO _x waiver or a VOC waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x or VOCs would contribute to an increase in the ambient O ₃ concentration such that the NAAQS for O ₃ may be exceeded (in an attainment area), or the NAAQS for O ₃ would continue to be exceeded (in an area that is non-attainment for O ₃).
	550.313(a)(3)	Your plan was approved with a NO _x waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x would contribute to an increase in the ambient concentration of NO _x such that the NAAQS for NO _x may be exceeded (in an attainment area), or the NAAQS for NO _x would continue to be exceeded (in an area that is non-attainment for NO _x).	See comment to § 550.313(a) above.	Your plan was approved with a NO _x waiver, and the air quality conditions in the affected State have changed to such an extent that your emissions of NO _x would contribute to an increase in the ambient concentration of NO _x such that the NAAQS for NO _x may be exceeded (in an attainment area), or the NAAQS for NO _x would continue to be exceeded (in an area that is non-attainment for NO _x).
	550.313(a)(4)	Your operation is emitting unauthorized air pollutants;	See comment to § 550.313(a) above. Furthermore, as noted in other comments, specificity should be added to this paragraph that clarifies the pollutants subject to this provision are criteria air pollutants above levels approve in the plan for the facility.	Your operation is emitting unauthorized air pollutants;
	550.313(a)(5)	Your operation is creating conditions posing an unreasonable risk to public health or welfare; or	See comment to § 550.313(a) above.	Your operation is creating conditions posing an unreasonable risk to public health or welfare; or
	550.313(a)(6)	Your operation is violating any applicable federal, State or tribal law related to air quality.	See comment to § 550.313(a) above. Furthermore, as discussed in Section 1.2.6 of our comments, BOEM lacks the authority to impose requirements unrelated to compliance with the NAAQS on any OCS facility. As such, BOEM has no authority to enforce violations of regulations under the jurisdiction of other agencies.	Your operation is violating any applicable federal, State or tribal law related to air quality.

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.313(b)	If a plan was approved for a short-term facility that becomes a long-term facility, a new air quality plan must be submitted for the facility under the standards applicable to a long-term facility. If this reclassification resulted from adverse weather conditions, or other circumstances beyond your control, that prevented operations in your lease area, the Regional Director may grant a temporary exception for a period not to exceed the number of months that you were unable to operate.	No comments on this provision.	N/A
<i>Under what circumstances will the Regional Supervisor review the projected emissions from my existing facility or facilities?</i>	550.314(a)	A State, or a Federally-recognized Indian tribe, may request the Regional Supervisor to supply it with the air pollution data regarding an existing facility's projected emissions, when such data are needed either for the updating of the State's emissions inventory or because a State believes an existing facility's projected emissions may cause or contribute to a violation of the NAAQS.	As discussed in Section 2.2 of our comments, all proposed rule provisions related to Class I areas, Sensitive Class II areas, and consultation with FLMs or Federally-recognized Indian tribes should be removed. Furthermore, it is requested that the term "believes" be replaced with the term "determined."	A State, or a Federally-recognized Indian tribe, may request the Regional Supervisor to supply it with the air pollution data regarding an existing facility's projected emissions, when such data are needed either for the updating of the State's emissions inventory or because a State determined believes an existing facility's projected emissions may cause or contribute to a violation of the NAAQS.
	550.314(b)	The Regional Supervisor may require you to submit air pollutant emissions data to the State, or a Federally-recognized Indian tribe, submitting such a request.	See comments to § 550.314(a) above.	The Regional Supervisor may require you to submit air pollutant emissions data to the State, or a Federally-recognized Indian tribe, submitting such a request.
	550.314(c)	The State, or a Federally-recognized Indian tribe, submitting a request may submit information to BOEM that it believes indicates projected emissions from an existing facility may cause or contribute to a violation of the NAAQS. You will be given the opportunity to present information to the Regional Supervisor that demonstrates that your facility's projected emissions do not cause such an effect.	See comments to § 550.314(a) above.	The State, or a Federally-recognized Indian tribe, submitting a request may submit information to BOEM that it believes indicates projected emissions from an existing facility may cause or contribute to a violation of the NAAQS. You will be given the opportunity to present information to the Regional Supervisor that demonstrates that your facility's projected emissions do not cause such an effect.
	550.314(d)	The Regional Supervisor will evaluate the new information submitted and will determine, based on the emissions data, the available meteorological data, and the distance of the facility from the SSB whether your actual emissions, including your attributed emissions, has the potential to cause or contribute to a violation of the NAAQS.	The requested changes are proposed to provide further clarity and to be consistent with previously discussed changes.	The Regional Supervisor will evaluate the new information submitted and will determine, based on the emissions data, the available meteorological data, and the distance of the facility from the SSB whether your facility's projected emissions, including your attributed emissions, has the potential to cause or contribute to a violation of the NAAQS.
	550.314(d)(1)	If the Regional Supervisor determines that your existing facility's projected emissions are unlikely to cause or contribute to a violation of the NAAQS, the Regional Supervisor will notify the requesting State, or a Federally-recognized Indian tribe, and you and explain the reasons for this finding.	See comments to § 550.314(a) above.	If the Regional Supervisor determines that your existing facility's projected emissions are unlikely to cause or contribute to a violation of the NAAQS, the Regional Supervisor will notify the requesting State, or a Federally-recognized Indian tribe, and you and explain the reasons for this finding.
	550.314(d)(2)	If the Regional Supervisor determines that your existing facility's projected emissions have the potential to cause or contribute to a violation of the NAAQS, you must submit the additional information that the Regional Supervisor requests in order for BOEM to determine whether or not your existing facility causes or contributes to a violation of the NAAQS. You must submit this information within 120 days of the Regional Supervisor's request, or within a longer period of time at the Regional Supervisor's discretion.	No comments on this provision.	N/A
<i>What are the air quality requirements for pipeline rights-of-way holders?</i>	550.1012(a)	When you apply for or acquire a ROW in any part of the OCS under the air quality regulatory jurisdiction of the Department, you must:	As discussed in Section 12.6 of our comments, RUE and ROW applications do not require air emissions data to be included under the current regulations and BOEM has not demonstrated that these activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Therefore, it is requested that this provision be deleted.	When you apply for or acquire a ROW in any part of the OCS under the air quality regulatory jurisdiction of the Department, you must:
	550.1012(a)(1)	Include in your application the information required by § 550.205; and	See comments to § 550.1012(a) above.	Include in your application the information required by § 550.205; and
	550.1012(a)(2)	Demonstrate that your activities will comply with the requirements of subpart C of this part.	See comments to § 550.1012(a) above.	Demonstrate that your activities will comply with the requirements of subpart C of this part.
	550.1012(b)	For the purpose of this section:	See comments to § 550.1012(a) above.	For the purpose of this section:
	550.1012(b)(1)	Any requirement in either § 550.205 or subpart C of this part that refers to plans should be interpreted to apply equally to ROW applications except for the provision regarding the consolidation of multiple facilities (§ 550.303(d)) and for the periodic resubmission of plans (§ 550.310(c)).	See comments to § 550.1012(a) above.	Any requirement in either § 550.205 or subpart C of this part that refers to plans should be interpreted to apply equally to ROW applications except for the provision regarding the consolidation of multiple facilities (§ 550.303(d)) and for the periodic resubmission of plans (§ 550.310(c)).

Appendix A - Requested Changes to Proposed Rule

New Rule Section Title	New Rule Reference	New Rule Text	Comments/Issues/Questions	Proposed Alternate Language
	550.1012(b)(2)	Any requirement in either § 550.205 or subpart C of this part that refers to lessees or operators applies equally to ROW holders or grantees, except that no additional requirements apply to any proposed or existing pipeline ROW or lease term pipeline holders, that are already included within the scope of an existing or proposed exploration or development plan.	See comments to § 550.1012(a) above.	Any requirement in either § 550.205 or subpart C of this part that refers to lessees or operators applies equally to ROW holders or grantees, except that no additional requirements apply to any proposed or existing pipeline ROW or lease term pipeline holders, that are already included within the scope of an existing or proposed exploration or development plan.
	550.1012(b)(3)	BOEM will notify BSEE of its determination that you have provided the information required by § 550.205 and met the requirements of subpart C of this part. If necessary, BOEM will notify BSEE of additional conditions necessary to ensure that your activities will comply with subpart C of this part.	See comments to § 550.1012(a) above.	BOEM will notify BSEE of its determination that you have provided the information required by § 550.205 and met the requirements of subpart C of this part. If necessary, BOEM will notify BSEE of additional conditions necessary to ensure that your activities will comply with subpart C of this part.

**APPENDIX B: COMMENTS ON INITIAL REGULATORY
IMPACT ANALYSIS**

Comments on the Initial Regulatory Impact Analysis

30 CFR 550 - Air Quality Control, Reporting, and Compliance; Proposed Rules

Docket ID No. BOEM-2013-0081

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EXECUTIVE SUMMARY

The Bureau of Ocean Energy Management (BOEM) has prepared an Initial Regulatory Impact Analysis (IRIA) of the proposed Air Quality Control, Reporting, and Compliance rules which aim to reduce NO_x (including nitrogen dioxide and nitric oxide) emissions and concentrations of pollutants associated with NO_x (including VOCs, SO_x, CO, and PM) generated from oil and gas operations within the Outer Continental Shelf (OCS). The changes proposed by BOEM for the Outer Continental Shelf alter the measurement periods, create unprecedented requirements for monitoring and photochemical dispersion modelling, and could impose costly new emission reduction measures.

Ramboll Environ (RE) was retained to assist in the development of comments on the economic arguments put forward by BOEM regarding anticipated costs and benefits of the proposed regulations. As part of this effort Ramboll Environ staff conducted a survey of the potential costs of compliance with the proposed rule, based on historical cost data from OCS operators and vendors. In addition, Ramboll Environ incorporated independent research and other publicly available information, when available, to validate and supplement the information provided by industry stakeholders. Where not otherwise cited, the results presented in this report are based on the survey conducted by Ramboll Environ.

The comments on the IRIA are organized into four categories: general comments, comments on the regulatory review process, comments on regulatory costs, and comments on regulatory benefits. Each comment section is summarized below.

GENERAL COMMENTS

1. Overall, Ramboll Environ finds that the costs of the rule significantly outweigh the benefits for a net cost of \$3.4 billion over the 10 year period.
2. BOEM estimates that the ten year net present value of the proposed regulation is negative \$97 million using a discount rate of three percent - which indicates that the cost of the regulation will exceed the benefit. This represents a government policy that is doing more harm than good.
3. The current BOEM benefit-cost analysis (BCA) overlooked or did not quantify many costs, such as the costs of installation and maintenance of emission reduction measures, and the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NO_x emissions.
4. The rule is premature since ongoing studies can affect the magnitude and direction of the proposed rule and its associated benefits and costs. As BOEM states on page 21 of the IRIA, "The results of the ongoing GOM and Alaska regional exemption studies will significantly change the number of plans required to model. BOEM does not have a basis at this time to estimate the direction or magnitude of this change".
5. The analysis assumes without justification that few, if any, operators will have to install BACT, but rather will be able to purchase NO_x emission credits in an emission trading market. Yet for most of the Air Quality Control Regions (AQCR) potentially affected, no markets currently exist. For those markets that do exist, should the rule be adopted as

proposed, the NO_x market would be flooded with demand for emission credits with no known source for increased supply. The result of this could be a significant increase in the price of emission credits thereby increasing the costs of buying offset credits. No analysis of these markets was conducted.

6. The regulation requires governmental approvals for many operational activities, yet there is no accounting for the cost of down time and delays, along with corresponding costs, while awaiting approvals.
7. There is no evidence provided by BOEM that NO₂ or ozone attainment levels are improved by the implementation of this rule. According to the IRIA the USEPA expects continued improvements over the next decade for air quality. By 2025, all of the Louisiana, Mississippi, Alabama and Florida coastal political subdivisions are expected to be in attainment for ozone (IRIA, page 33).
8. There is no accounting for uncertainty in the analysis, such as uncertainty in future oil prices, uncertainty in markets, uncertainty in future regulatory policies, or uncertainty in the values of key parameters in the modeling analysis.

REGULATORY REVIEW PROCEDURES

1. Executive Order 12866, which governs regulatory review, requires that agencies promulgating regulations must identify a problem that the rule will remedy. The IRIA fails to identify such a problem.
2. The best available scientific research on air quality in the OCS is still underway, thus making the regulation premature.
3. The proposed regulation duplicates regulatory efforts such as those under the International Convention for the Prevention of Pollution from Ships (MARPOL). The rule fails to incorporate USEPA and US Coast Guard enforcement of MARPOL Annex VI Air Pollution Prevention Requirements.
4. Consistent with the Regulatory Flexibility Act, the agency has acknowledged that there will be differential impacts on small firms but has failed to provide detailed analysis of these impacts or modify the proposed regulation to mitigate this impact.

TECHNICAL ANALYSIS OF COSTS

1. BOEM's IRIA includes inaccurate and limited cost information, which results in an underestimate of total costs (see Section 3 of this report). For example, where BOEM anticipates the first year of the regulation will cost \$22.9 million, Ramboll Environ estimates that the first year could cost more than \$529 million.
2. Over ten years, BOEM estimates that the present value of costs (at a 3 percent discount rate) will be \$289 million, while Ramboll Environ estimates the costs could be over \$3.4 billion.
3. The ten year timeframe of the BOEM analysis hides the fact that net losses to society will continue well after the year 2027, and will continue to grow.

4. The results of Ramboll Environ estimates of the true cost of the proposed regulation are shown in Table ES-1 below.

Table ES.1 – Comparing BOEM Cost Estimates and Ramboll Environ Estimates*				
Regulation Change	BOEM		RAMBOLL ENVIRON	
550 Subpart B	Year 1 Cost	10-Year Cost (3%)	Year 1 Cost	10-Year Cost (3%)
Contents of Exploration Plans	\$260,400	\$2,714,231	\$2,728,000	\$23,270,393
Contents of DPP and DOCD	\$444,154	\$4,402,546	\$5,766,000	\$49,185,150
Total Subpart B	\$704,554	\$7,116,777	\$8,494,000	\$72,455,543
550 Subpart C				
Air Quality Analyses in Plans	\$1,721,624	\$76,999,522	\$14,848,700	\$112,075,776
Emission Reduction Measures	\$17,290,668	\$139,946,251	\$66,143,391	\$600,498,895
Monitoring & Reporting	\$3,161,244	\$65,248,849	\$439,556,749	\$2,633,021,132
General	\$1,240	\$10,577	\$1,240	\$10,577
Total Subpart C	\$22,174,776	\$282,205,199	\$520,550,080	\$3,345,606,381
550 Subpart J				
Collect, maintain & submit all air quality records	\$62,496	\$533,104	\$62,496	\$533,104
TOTAL	\$22,941,826	\$289,855,080	\$529,106,576	\$3,418,595,027

*Totals may not sum due to rounding

TECHNICAL ANALYSIS OF BENEFITS

1. BOEM estimates the benefits of offshore emission reductions through the use of the data contained in the Offshore Economic Cost Model (OECM). However, the resolution of the OECM results is very wide (e.g. the same \$5,000/ton value of impact is assumed within a band of more than 100 miles in terms of the distance to the shore). Hence, it is difficult to see how the agency can justify claiming that moving the measurement boundary out from the coast to the state submerged boundary (a distance of a few miles) would actually increase the benefits; the model resolution is too coarse.
2. BOEM needs to estimate the impacts to onshore residents from offshore sources. The Agency used data generated from the Air Pollution Emissions Experiments and Policy (APEEP) model which contains data for only onshore impacts. APEEP uses data from within the contiguous US only and has no offshore component. In addition, uncertainties associated with the dose-response functions used from the APEEP model are not

considered. The standard errors associated with each of these components are not taken into account and no sensitivity analysis is provided.

3. BOEM needs to justify the theoretical basis of their approach using data drawn from the APEEP model and to calibrate the parameters of the model to actual offshore data. As it currently stands, BOEM is using observations drawn from a population of onshore impacts only with two variables, distance and compass bearing location, to predict offshore impacts. There is no rationale provided that the approach selected is correct nor is there any theoretical underpinning supporting the model specification provided. The model needs to be calibrated against actual offshore data. Otherwise, it is merely speculative and provides no basis for the rule.
4. Qualitative benefits are assessed by BOEM to ultimately outweigh the quantified net costs. These benefits include “reductions in lessee/operator costs,” and “increased compliance” through improved information. Both of these statements can and should be quantified, especially if assumed to be sufficiently significant to overwhelm the net costs (negative \$122 million over 10 years). Without this quantification, BOEM’s analysis does not support the promulgation of the rule.

1 General Comments

The Bureau of Ocean Energy Management (BOEM) has prepared an Initial Regulatory Impact Analysis¹ (IRIA) of the proposed Air Quality Control, Reporting, and Compliance rules for reducing NO_x (including nitrogen dioxide and nitric oxide) emissions and concentrations of pollutants associated with NO_x (including VOCs, SO_x, CO, and PM). The changes proposed by BOEM for the Outer Continental Shelf (OCS) alter the measurement periods, create unprecedented requirements for monitoring and modeling of air dispersion or photochemistry, and impose costly new emission reduction measures attributed to plan emissions. Comments on the IRIA have been collected by Ramboll Environ (RE) on behalf of certain trade organizations and are expressed in this document. The remainder of this section provides an overview of our findings. Section 2 describes BOEM's failure to follow regulatory procedures, Section 3 includes our technical summary and review of cost estimates, and Section 4 concludes with our technical analysis of benefit estimates.

This section provides some background on the proposed regulation and IRIA process. It then addresses the benefit-cost analysis and conclusions drawn in the IRIA and provides a summary of RE's assessment of the costs, as developed from OCS operator and vendor inputs. Other key general comments explained below in greater detail are:

- the failure of the agency to identify a problem that justifies the new regulation,
- the failure to demonstrate that this rule would hasten the progress toward attainment of air quality goals,
- dependence upon emissions trading markets without considering market capacity limitations,
- failure to address impacts on small firms,
- shortcomings of the IRIA with regard to incorporating uncertainty (or lack thereof),
- failure to address the potential for regulatory delays and resultant downtime in OCS production, and
- regulatory overreach presented by the proposed action.

1.1 Background Information

The Outer Continental Shelf Lands Act mandates that the OCS, which was deemed by Congress to be "a vital national resource," be "made available for expeditious and orderly development, subject to environmental safeguards . . ." 43 U.S.C. § 1332(3). A reasoned balancing is thus required of Congress' goal of expeditious development with appropriate environmental safeguards. Yet such a balancing is impossible when estimates of the impact and compliance costs are "tremendously uncertain," or have negative benefits, as BOEM has acknowledged in the IRIA.

¹ <https://www.regulations.gov/document?D=BOEM-2013-0081-002>, Air Quality Control, Reporting, and Compliance, Initial Regulatory Impact Analysis, March 3, 2016

In addition to this OCLSA requirement of weighing costs against benefits, a particularly stringent quantitative analysis is required for rules that will have an annual effect to the economy in excess of \$100 million. Due to Executive Orders 12866 and 13563, BOEM is required to use the best available information to calculate the benefits and costs of the proposed rule. This quantitative benefit-cost analysis will, by law, form a primary component of the rulemaking process.

BOEM used monetary values from the Air Pollution Emissions Experiments and Policy (APEEP) analysis model results to determine benefits from offshore NO_x reductions. The APEEP results are based on estimated onshore emissions impacts only associated with NO_x, particulate matter (PM), volatile organic compound (VOC) and sulfur dioxide (SO₂) emissions. The model was not used directly; rather some results from the model were used in an *ad hoc* specification to predict onshore impacts from offshore effects for NO_x only.

In addition, BOEM asserts that the rules will also improve air quality and reduce health expenditures from exposure to other air pollutants, but did not monetize their impacts because of the uncertain nature of their reductions and overall uncertainties related to their assessment.

1.2 Summary of Benefit-Cost Estimates showing Benefits do not Exceed Costs

BOEM's estimate of annualized costs presented in the IRIA are developed based on some (but not all) capital costs, one-time labor costs, on-going annual costs, and other emissions reduction costs. BOEM projects both the total costs and benefits for the first full year the rule is in effect (2017) and for each subsequent year until 2026. The net benefits are the difference between the total benefits and the total costs.

BOEM estimates a positive net benefit for only the period 2017 to 2019, and an increasingly negative net benefit from 2020 to 2026. In sum, BOEM estimates the net benefit over 10 years is -\$122 million (not discounted), showing the rule has an overall net cost.

Had BOEM more fully analyzed the costs and benefits, the negative benefits (net costs) would have been greater. Ramboll Environ reviewed BOEM's assumptions, calculations and analysis and updated the cost estimates. Our review finds significant errors in BOEM's IRIA cost and benefit estimates and that BOEM's net cost is significantly underestimated.

Overall, Ramboll Environ finds that the costs of the rule could significantly outweigh the benefits, and to a greater degree than that estimated by BOEM. Specifically:

- After correcting for BOEM's underestimated cost estimations, our estimate for total costs for the first year is \$529 million with no certainty of any benefits.
- This leads to a net cost of \$3.4 billion over the 10 year period.
- One of the most significant cost factors are for measurement of emissions using Parametric Emission Monitoring System (PEMS), costing up to \$785.7 million over the 10-year period of analysis.
- The costs of Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) are estimated by Ramboll Environ to be \$397.7 million over the

10-year period of analysis assuming only 5 units are required to install SCR per year. The number of units requiring BACT could be much higher.

- While the time frame in the IRIA is for 10 years, the true net cost to society could be much greater than that, as each year after the first 10 could present a significant additional net cost to the nation.

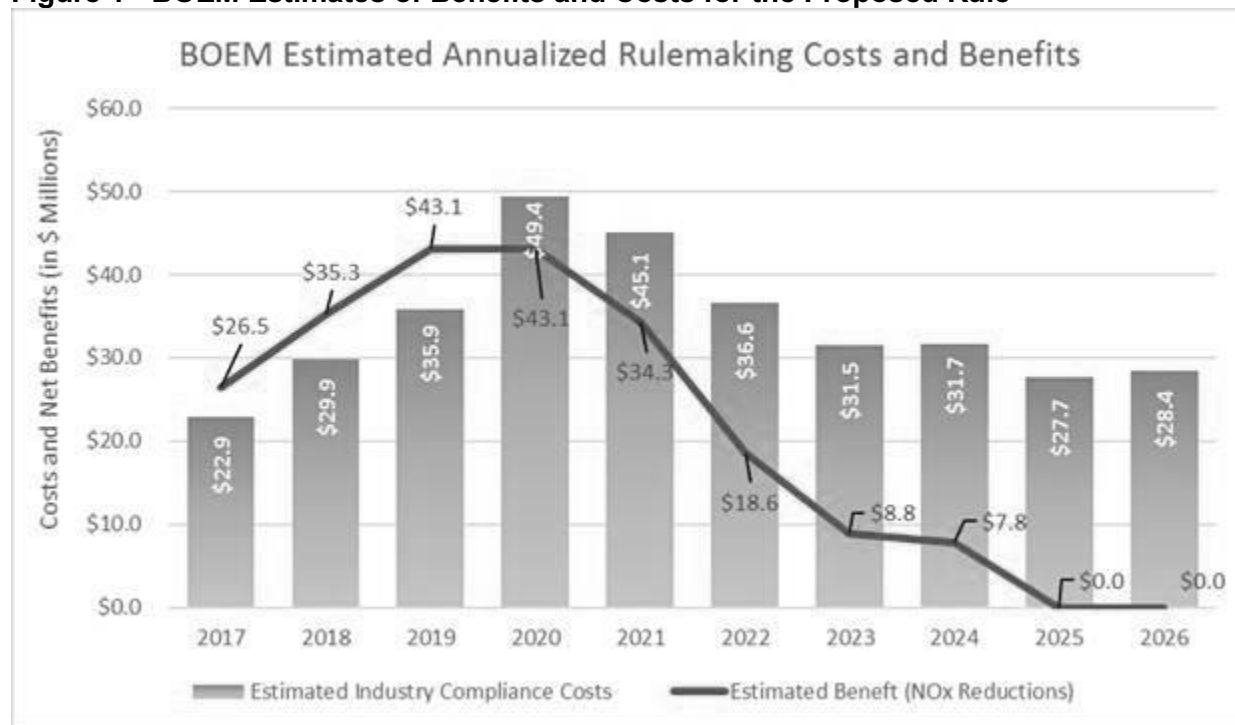
While BOEM concludes that the benefits of the rule do not exceed the costs, this acknowledgement is understated since the IRIA underestimates costs by only including information collection (IC) costs, and ignoring the costs of installation and maintenance of emission reduction measures, among other oversights. Furthermore, BOEM's cost estimates do not include the cost of using Selective Catalytic Reduction (SCR) as a Best Available Control Technology (BACT) for NO_x emissions, and assumes without justification that few, if any, operators will have to install BACT of any type. BOEM assumes that NO_x emission credit trading will be a cheaper alternative and that credit trading at \$3,000 per ton will be easy and possible throughout the different Air Quality Control Regions (AQCRs) even though for most of those regions credit trading markets do not exist. There are numerous flaws in these assumptions and assertions which we detail in this report.

On page 5 of the IRIA, BOEM states that

“The net quantified benefits for this proposed rule are estimated to be positive in the first three years and **negative in all subsequent years of the 10-year window of this analysis.**” (emphasis added)

IRIA, page 5

In fact, the agency's analysis shows that over the course of the 10 year window of analysis, the total net cost of the proposed rule approaches \$122 million dollars, compared with a benefit that declines to zero after eight years (see Figure 1).

Figure 1 - BOEM Estimates of Benefits and Costs for the Proposed Rule

Based on the cost and benefit data presented in Figure 1, promulgation of the proposed rule would violate OCSLA's mandate of a reasoned balancing of "expeditious and orderly development" and environmental safeguards. It also would contravene the updated Executive Order (E.O.) 13563, which reaffirms E.O. 12866 and further states that agencies must,

*(1) propose or **adopt a regulation only upon a reasoned determination that its benefits justify its costs** (recognizing that some benefits and costs are difficult to quantify); (2) tailor its regulations to **impose the least burden on society**, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that **maximize net benefits** (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity).*

E.O. 13563, (emphasis added)²

If the benefit-cost analysis (BCA) determines that none of the proposed regulatory configurations provides an environmental or social benefit that is greater than the cost of executing the components of the rule, then OMB has the obligation to return the proposed rule.

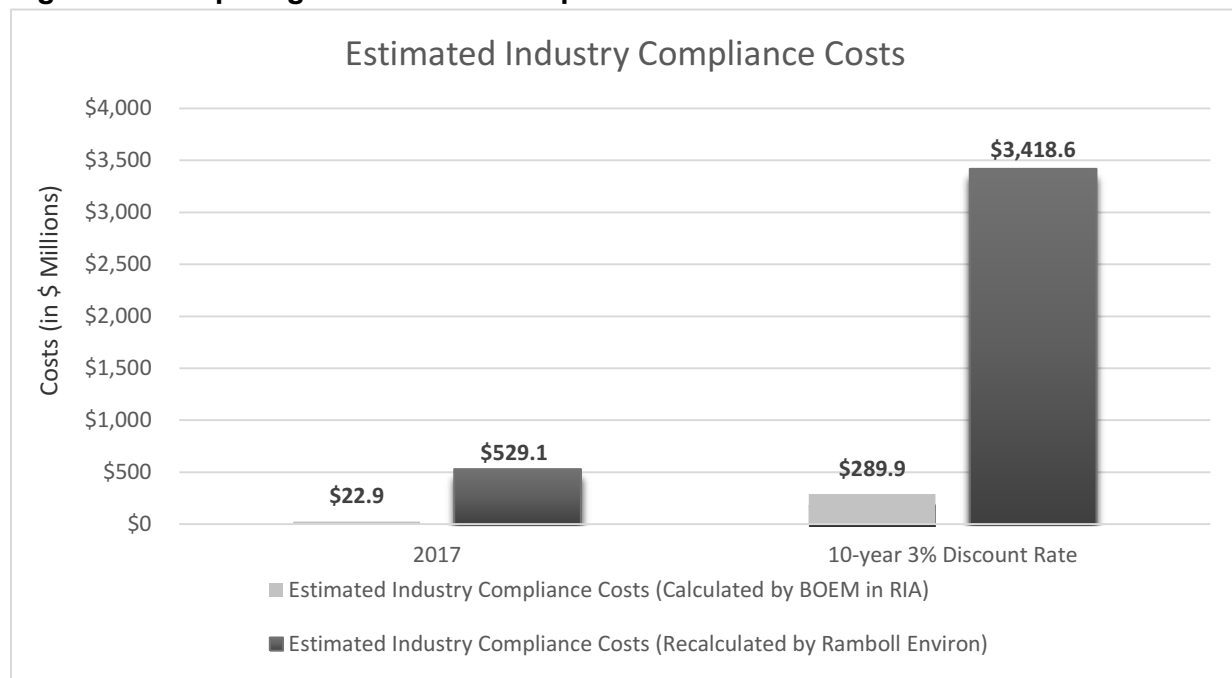
² The President. "Executive Order 13563, Improving Regulation and Regulatory Review." 76 Fed. Reg. 3821 (Jan. 18, 2011). Available at (<http://www.gpo.gov/fdsys/granule/CFR-2012-title3-vol1/CFR-2012-title3-vol1-eo13563/content-detail.html>).

Ramboll Environ conducted a survey of OCS operators and vendors to assist in its analysis of the accuracy of the cost estimates presented in the IRIA. Where costs estimates varied from the BOEM estimates, Ramboll Environ conducted research to verify the estimates and understand where and why the estimate departs from the BOEM estimate. The results of our research provide the basis of these comments on the IRIA, with details of the cost estimates provided in Chapter 3. Where estimates varied between firms, and between different potential interpretations of the proposed rule, we have provided a range of estimates but conservatively applied a lower value in our revision of BOEM's calculations.

Table 1 shows a comparison of BOEM's calculation of compliance costs compared to the compliance costs as recalculated within this analysis. The first year costs are estimated to be approximately \$23 million by BOEM, and over \$529 million by Ramboll Environ, representing a 23 fold increase. The ten year costs similarly represent a 12 fold increase over the BOEM estimates. The same data are shown graphically in Figure 2.

Table 1.1 – Industry Compliance Costs		
	Annual Cost in 2017 (Millions)	10-year Cost (Millions, using 3% Discount Rate)
BOEM Estimate	\$23	\$289
Ramboll Environ Estimate	\$529	\$3,418
Increase Factor (Ramboll Environ/BOEM)	23	12

Figure 2 –Comparing Estimates of Compliance Costs



1.3 Regulation is not Justified and is Premature

The regulatory review process follows guidance from E.O. 12866, which explains the federal regulatory philosophy and principles. The very first of these principles states,

“Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.”

E.O. 12866³

Yet BOEM has failed wholly to identify any substantial deficiencies with the current regulatory system. Neither has the agency addressed the significance of this unstated defect.

As part of the IRIA analysis, agencies are required to assess a range of regulatory alternatives as well as non-regulatory actions. As required under E.O. 12866, Section 6(a)(3)(C)(iii), the agency shall also provide to OIRA the following additional information developed as part of the agency’s decision-making process (unless prohibited by law):

“An assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, identified by the agencies or the public (including improving the current regulation and **reasonably viable non-regulatory actions...**”⁴ (emphasis added)

E.O. 12866

In this instance, the “no action” or baseline alternative for the IRIA specifies delaying the publication of the proposed regulatory changes until 2018 or 2019, when BOEM has completed the process of evaluating the current exemption threshold equations (IRIA pg. 64).

The IRIA offers several justifications as to why the proposed modifications to the rule should be adopted prior to the 2018 time frame. All of the provided justifications are vague and insufficient.

- The IRIA asserts that by waiting, the proposed revisions would “not be incorporated” into BOEM’s regulations and that benefits would not be realized (page 64 of the IRIA). Yet, BOEM’s own analysis indicates that the benefits of the proposed revisions even ignoring the costs are not significant, so it seems that waiting would save costs.

³ The President. “Executive Order 12866, Regulatory Planning and Review.” 58 Fed. Reg. 51735 (Sept. 30, 1993), page 1. *Amended by* Executive Order 13258 and Executive Order 13422. Executive Order 13497, signed January 30, 2009, revoked those amendments. Available at (<http://www.archives.gov/federal-register/executive-orders/pdf/12866.pdf>).

⁴ *ibid*

- The IRIA asserts that waiting until the 2018 results are published would “make it more difficult” for BOEM to meet its statutory duties. However, the IRIA offers no further explanation for, or evidence of, the source of this increased difficulty, or an explanation as to how a delay would impede BOEM from executing its statutory duties. In fact, the IRIA explicitly states that,

...it is BOEM’s current practice to update the SILs and AAls and add the additional air pollutants for which standards have been established by the USEPA even without changes in BOEM’s regulations

And,

Regardless of whether the current regulatory action occurs now or is postponed, once these studies have been completed, BOEM anticipates that it will update the exemption threshold (currently at § 550.303(c) and § 550.303(d) in the proposed regulations.

IRIA, pg. 64 & 65

This suggests that under current conditions, BOEM is already capable of making updates and/or meeting its statutory obligations without the need for the inefficient and costly revisions proposed by this rule.

1.4 No Evidence that Attainment Levels are Expected to Improve

Originally passed in 1953, the Outer Continental Shelf Lands Act (OCSLA) (43 U.S.C. §§ 1331-1356(a)) was designed to ensure that the United States had jurisdiction over the seabed floor, and the right to lease, explore, and develop and produce the associated mineral resources. In its initial configuration, OCSLA did not address air quality on the OCS. However, in September 1978, Congress amended the OCSLA, adding a new Section 5(a)(8) that grants the Secretary of the Interior authority to promulgate regulations

*for compliance with the national ambient air quality standards pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.), **to the extent that activities authorized under this Act significantly affect the air quality of any State**” (emphasis added).*

This authority is further limited by a requirement to weigh expeditious and orderly development with environmental safeguards. In 1980, BOEM used these authorities to develop the Air Quality Regulatory Program (AQRP) whose proposed revisions are the subject of this IRIA.

No evidence exists that the proposed rule will increase the number of areas that transition from non-attainment to attainment and/or an improvement in the rate at which attainment designations are achieved.

Indeed, according to data presented in the IRIA (pg. 34 and 35), BOEM expects continued improvements in air quality over the next decade so that by 2025 the affected GOM coastal political subdivisions will be in attainment before factoring in any of the benefits purported to be associated with the proposed rule changes.

1.5 Credit Market not a Viable Alternative

BOEM failed to study the true costs of a NO_x credit market and other allowances and failed to determine the impacts of this rule on the existing credit markets. The rule assumes that NO_x allowance credits exist and will be a less expensive alternative to BACT, costing only \$3,000 per ton. In fact, emission credit markets for most of the AQCRs do not exist.

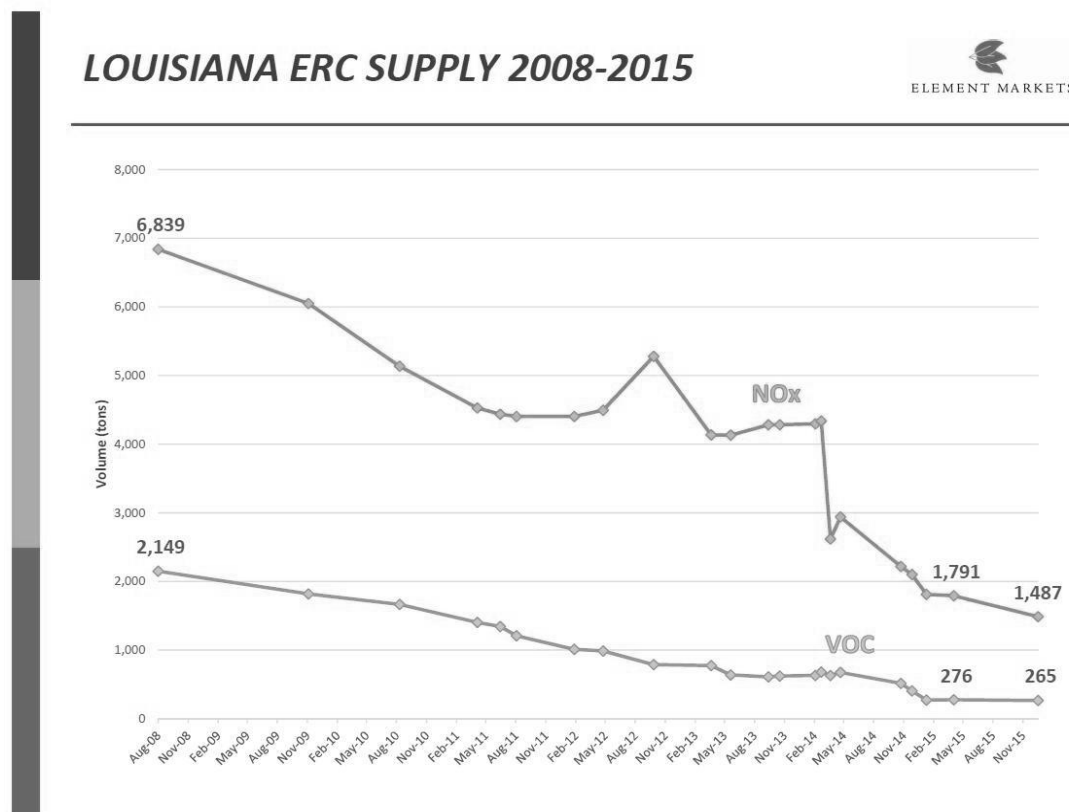
Considering past credit prices, which have regularly exceeded **\$50,000 per ton in the Houston-Galveston ozone non-attainment area**⁵, BOEM's estimate of a \$3,000 allowance price in a market where demand exceeds supply is very unlikely. In reality, the cost of NO_x credits could far exceed the magnitude of BOEM's assumed benefit of \$5,000 per ton. Furthermore, the impact of adding so many new entrants to the credit markets could have considerable impacts on existing market participants.

For ozone non-attainment areas in Louisiana, the price of NO_x allocation credits has fluctuated between \$3,000-5,000 per ton for fifteen years, until recent expansions in the non-attainment area. Since the expansions, the availability of credits has dropped by nearly 80 percent, and **NO_x allocation credits have now ranged in price from \$18,000-25,000 per ton** for credits expiring in ten years⁶. Figure 3 shows the dramatic decline in availability of NO_x emission reduction credits (ERC) in Louisiana over the last seven years. The decreased supply correlated to increased difficulty and expense in obtaining credits. If more firms decide to participate in a NO_x trading market due to this rule, general economic theory suggests that demand for credits will increase, the availability of credits decrease, and the price increase. There could be a disproportionately negative impact on smaller firms.

⁵ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016

⁶ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016

Figure 3 –Available Air Quality Credits in Louisiana



Source: Element Markets. Baton Rouge ERC Market Overview. May 21, 2015. 7

The NO_x allowance markets in Texas are significantly more complex. The Mass Emissions Cap and Trade Program (MECT) started in 2002 and allows for banking and trading of NO_x credits between regulated facilities in the Houston-Galveston nonattainment area⁸. New facilities do not receive an allocation and must purchase allowances from the market. Also in existence is the older Emission Reduction Credit (ERC) program, which allows participants to purchase a credit to emit⁹. Until 2002, NO_x ERCs were available for \$5,000 to \$10,000 per ton. After 2002, facilities producing greater than 10 tons of NO_x were required to join the MECT. Few NO_x ERCs have been available¹⁰, and many sources have chosen to temporarily shut down and bank credits while the prices are high.

⁷ Accessible at <http://la-awma.org/files/AWMA+presentation+by+Element+Markets+-+Louisiana+ERCs+5-21-2015.pdf>

⁸ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at <http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

⁹ Element Markets. The Scarcity and Expense of HGB Emission Reduction Credits: Issue and Opportunity. October 1, 2013. Accessible at <http://www.awma-gcc.org/docs/HGB%20-%20AWMA%20Presentation%20by%20Element%20Markets%2010-1-2013.pdf>

¹⁰ Element Markets. The Scarcity and Expense of HGB Emission Reduction Credits: Issue and

NO_x ERCs can be used for VOCs at a trading ratio, but MECT NO_x allowances cannot be used for VOC, causing NO_x ERCs to be more valuable. **NO_x ERCs have fluctuated between \$90,000 to \$125,000 per ton in Houston** and in 2014, the NO_x ERCs reached a high of **\$300,000 per ton** when very few were available¹¹. MECT NO_x stream credits range from **\$53,000 to \$65,000 per ton** with 40,000 tons traded annually. Roughly 28,000 tons of NO_x ERCs are available, but, based on past experience, the price can change dramatically as the availability of credits fluctuates¹².

In most attainment areas along the Gulf Coast, there are no credits available for purchase, but the Texas Commission on Environmental Quality (TCEQ) operates a voluntary Discrete Emission Credit (DEC) program, issuing Discrete Emission Reduction Credits (DERCs) for both mobile and stationary sources¹³. We are not aware of any similar programs in Mississippi, Alabama, Florida, or Louisiana, although Louisiana has proposed regulation to do just that.

Due to the existence of the MECT program in Texas, there is very low generation of NO_x DERCs¹⁴. In 2012, the average price of a NO_x DERC was \$4,750, but sold for a high of \$11,266 per ton in 2009¹⁵. Note that these are the NO_x allowance prices in the **voluntary trading program in attainment areas**, indicating that NO_x allowances in **non-attainment areas** could be much more expensive than the \$3,000 per ton assumed in the IRIA. This indicates that, contrary to BOEM's assertions in the IRIA, BACT may be the cheapest emissions control alternative, but BACTs is still significantly more costly than the benefit of \$5,000 per ton from NO_x emissions reductions claimed by BOEM.

Regarding other criteria air pollutants, there are two non-attainment areas for the 8-hour ozone EPA standard in the Gulf of Mexico and two for the 1-hour sulfur dioxide (SO₂) EPA standard. Baton Rouge (LA) and Houston-Galveston (TX)¹⁶ are non-attainment areas for ozone and

Opportunity. October 1, 2013. Accessible at <http://www.awma-gcc.org/docs/HGB%20-%20AWMA%20Presentation%20by%20Element%20Markets%2010-1-2013.pdf>

¹¹ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016.

¹² Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016.

¹³ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at

<http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

¹⁴ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at

<http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

¹⁵ Texas Commission on Environmental Quality. Discrete Emission Credit Banking and Trading Program Audit. 2013. Accessible at

<http://www.tceq.texas.gov/assets/public/implementation/air/banking/reports/2013decprogramaudit.pdf>

¹⁶ Environmental Protection Agency. Current Nonattainment Counties for All Criteria Pollutants. Updated April 22, 2016. Accessible at <http://www3.epa.gov/airquality/greenbook/ancl.html>

Tampa-Hillsborough County (FL) and New Orleans-St. Bernard Parish (LA) are non- attainment areas for SO₂¹⁷ .

A SO_x market does not currently exist in Louisiana or Texas, but default allowance prices are roughly \$5,000 per ton when starting a market. As a point of comparison, SO_x prices in California now reach \$18,000-20,000 per ton, but are less in New Jersey, where they are often bought at a 40-to-1 ratio for Particulate Matter (PM)) credits (\$10,000 per ton)¹⁸.

The rule as proposed would require operators to seek ERCs in the affected AQCR. Although not accounted for in the rule, the use of emission credits offshore would likely require additional modelling to document that the reductions would positively impact the affected AQCR. This suggests the vast majority of potential ERCs that would be needed would be supplied in markets that have yet to be established and agencies responsible for tracking, maintaining and overseeing the markets have little or no experience in these types of markets. BOEM appears to underestimate the start-up time and transactions costs associated with establishing a smoothly running market with liquidity and stable prices. Rather BOEM is assuming credits can be bought within all of the AQCRs for an average price of \$3,000 per ton within three years of rule implementation.

The fact that credit markets for other criteria air pollutants (excluding NO_x) do not yet exist and that establishing these markets is costly from both a financial and temporal perspective indicates that it will not be feasible for these pollutants to be offset using emissions credits as an ERM.

1.6 Differential Impacts on Smaller Firms

BOEM acknowledges in the IRIA that the proposed changes have the potential to unduly burden small businesses.

*...Based on this initial analysis, BOEM expects the implementation of this proposed rule to have **an economic impact on a substantial number of small entities** under 5 U.S.C. 605(b).*

IRIA, page 84 (emphasis added)

BOEM estimates that the proposed rule changes will affect 130 companies operating in the GOM, 69 percent of which (90 firms) meet the Small Business Administration's North American Industry Classification System (NAICS) criteria for classification as a small business. The IRIA suggests that for small firms that are well-capitalized the incremental cost of additional or consolidated reporting is "a small cost in the context of an exploration or development project" (IRIA pg. 86). The potential implication of these statements is that because the operations are well capitalized the additional cost burdens will not be unreasonable or unbearable. However, no information is presented that indicates that any type of marginal analysis was conducted to

¹⁷ Environmental Protection Agency. Current Nonattainment Counties for All Criteria Pollutants. Updated April 22, 2016. Accessible at <http://www3.epa.gov/airquality/greenbook/ancl.html>

¹⁸ Michael Taylor, President of Emission Advisors, Inc., personal communication, April 26, 2016

determine the magnitude of the impact of these additional costs or to evaluate whether, and at what point, the additional costs of the new requirements might push a small business beyond the break-even point of operations. Further, the notion that small firms are well capitalized is unsupported and ignores current economic conditions.

The analysis takes a very broad approach, suggesting that since 37 percent of the historically submitted plans can be attributed to small businesses, 37 percent of the total anticipated calculated costs of reporting and compliance can also be attributed to operations that meet the small business criteria (IRIA pg. 86). If the assumption is that costs of the proposed rule are the same per firm, then it stands to reason that such a cost represents a much higher share of total cost to a small firm than it does to a large firm and as such, would differentially impact small firms.

Beyond the failure to fully examine the direct impacts of the costs associated with the proposed rule on small businesses operating in the industry directly, the analysis presented does not look at the second or third order impacts on second and third tier support industries, many of which are small businesses.

For example, in the context of the emission credit trading markets, the IRIA fails to consider the impacts of the rule on existing market participants, some of which are small firms. Adding a large influx of demand for emission credits and allowances could dramatically increase the cost of emission credits, which could hurt the smallest market participants the most. If small, onshore industries are unable to procure emission credits in the market, they will be forced to shut down, impacting the community and the region. This will have extrapolating effects on employment and quality of life for the people in these regions. None of these impacts were considered in the IRIA but could be significant.

Even without the level of detail suggested above, the BOEM IRIA analysis concludes that small businesses will in fact be unduly affected by the proposed rule changes. In light of this conclusion, BOEM is statutorily obligated to explore and quantify the magnitude of that impact. BOEM failed to complete this work.

1.7 Uncertainty

The Initial Regulatory Impact Analysis recognizes uncertainties may exist regarding the availability and price of emissions offsets (pg. 43); uncertainty over exemption thresholds (pg. 43); and uncertainty associated with industry activity, technological innovation and future air quality standards (pg. 59). However little attempt is made in the IRIA to characterize and assess the level and impact uncertainty may have on the estimation of benefits and costs.

OMB suggests because uncertainty is basic to many analyses, its effects should be analyzed and reported.

Useful information in such a report would include the key sources of uncertainty; expected value estimates of outcomes; the sensitivity of results to important sources of uncertainty; and where possible, the probability distributions of benefits, costs, and net benefits.

On page 42 the IRIA states:

While the price of NO_x credits can vary widely, credits are assumed to be offsets that cost an average of \$3,000 per ton of NO_x reduced in this analysis.

No attempt is made to characterize the uncertainty or understand the nature of the volatility in emission credit prices but rather it is assumed prices are constant for the analysis. In fact, for most of the AQCRs, markets do not exist. Data presented in Section 1.5 of this document for existing markets shows high volatility of prices. Uncertainties associated with establishing emission credit markets within the AQCRs were not presented in the IRIA. Rather it is assumed the NO_x emission credit price will stay at the low end of the historic range and not vary much even though existing emission credit markets have shown significantly higher average prices with large variances.

On the benefits assessment, BOEM failed to account for the uncertainties surrounding the estimates which include ambient air quality impacts, dose-response function values and monetized values. All these inputs and parameters are highly uncertain which BOEM failed to properly account in their analyses. For example, uncertainties associated with the dose-response functions used from the APEEP model are not considered. These relate changes in ambient pollutant concentrations to changes in the risk or probability of a given health effect. For example, ambient concentrations are highly variable for a specific area. Population effects are highly variable as well, depending on age and exposure profiles. The standard errors associated with each of these components are not taken into account and no sensitivity analysis is provided.

Given that the rule addresses offshore impacts, an offshore model is required. In particular, BOEM was required to estimate the impacts to onshore residents from offshore sources. However, BOEM used data generated from APEEP, which contains data for only onshore impacts. APEEP uses data from only within the contiguous US and has no offshore component. To estimate offshore effects, BOEM developed a "regression model" that describes the Gaussian transfer coefficients in APEEP as a function of the distance and compass direction between source and receptor locations. BOEM then used this regression model to predict the impacts from offshore locations. BOEM has essentially drawn observations from a population of onshore impacts only and is using only two variables - distance and compass bearing - to predict offshore impacts using a third order fitted polynomial equation.¹⁹ This approach is problematic for a number of reasons. First, the approach lacks any theoretical basis. There is no theory supporting the model specification, assuming other functional forms or additional variables will change the results. Moreover, the regression results explain less than twenty

¹⁹ U.S. Department of the Interior Bureau of Ocean Energy Management. Forecasting Environmental and Social Externalities Associated with OCS Oil and Gas Development: The Revised Offshore Environmental Cost Model (OECM). OCS Study BOEM 2012-025. Appendix C

percent of the variance. It is very likely that the model is mis-specified and given the lack of theoretical basis also suffers from issues such as omitted variable errors. At a minimum, a sensitivity analysis should be conducted to better understand the implications of adding other variables and testing of various functional forms. This will help to better understand whether offshore impacts are affecting onshore populations. Finally, the model needs to be calibrated against actual offshore data. Otherwise it is merely speculative and provides no basis for the rule.

It is important to recognize that such price, modeling, and regulatory uncertainties can complicate objective, reliable, and meaningful quantitative measurement of the effects of new regulations. The IRIA fails to provide any analysis for handling price and market uncertainty and variability in the context of demonstrating impact to the oil and gas industry.

1.8 Failure to Include Potential Costs of Delays and Down Time

Economic costs include all costs and not simply financial expenditures. Additional monitoring, data collection, and permitting processes can result in additional down time or days of lost production. It has been demonstrated that these opportunity costs can be a significant component of overall costs.²⁰ As such, BOEM should evaluate these costs and include them in the benefit-cost calculation.

²⁰ Graham, J and C. Liu. Regulatory and quasi-regulatory activity without OMB and cost-benefit review. Harvard Journal of Law & Public Policy 37(2):425-445 · December 2013. ENVIRON International Corporation. Arctic Regulations Benefit Cost Analysis. 2014.
www.reginfo.gov/public/do/eoDownloadDocument?pubId=&eodoc=true...770

2 Failure to Follow Regulatory Procedures

Prior to the public release of draft regulations, the Office of Information and Regulatory Affairs, a division of the Office of Management and Budget (OMB) conducts a review, pursuant to Executive Order 12866. E.O. 12866 sets forth the broad principles agencies are required to adhere to when proposing new regulations. The order provides that agencies,

shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.

E.O. 12866, page 2

Pursuant to this guidance, it is the responsibility of the agency proposing a regulatory action to provide OMB with an analysis that describes and justifies the need for the proposed regulatory action and includes a BCA. As part of the BCA, agencies are required to assess a range of regulatory alternatives as well as non-regulatory solutions before proposing a regulatory action.

If OMB's review of the agency's BCA indicates that the proposed rule does not provide an environmental or social benefit that equals or exceeds the cost of executing the new rule, OMB has the authority to reject the proposed modification or to return the proposed rule to the agency for review and modification.

The draft IRIA and the proposed rule fail to analyze the impacts of the rule in a manner that is consistent with the 12 principles of good regulation as outlined in EO 12866. The most concerning of these failures of the 12 principles are as follows:

2.1 Principle 1: Identify the Existence of a Problem

E.O. 12866 requires that BOEM identify a problem of significance and demonstrate that the emissions from OCS facilities cause or contribute to violations of NAAQS. BOEM did not provide a rationale or demonstrate a need for the proposed new rule elements.

No data or examples are included that demonstrate an OCS facility has caused or contributed to a violation of the NAAQS onshore. The Environmental Assessment accompanying the proposed rule finds that the impact of the proposal would be "minimal," because "on the whole...OCS operations have a minimal impact on the air quality onshore."²¹ In the IRIA, BOEM states,

...air dispersion modeling does not show an impact to state air quality or the need for emission reduction measures.

IRIA, page 75

²¹ BOEM, March 2016 Environmental Assessment, Section 4.2 – Alternative B: No Action Alternative, Pg. 17

A review of the National Environmental Policy Act (NEPA) documents prepared by BOEM further confirms that OCS sources are not significantly affecting the air quality of any state. For example:

- BOEM's most recent Final Programmatic Environmental Impact Statement (PEIS) was published in 2012 and addressed the 2012-2017 OCS oil and gas leasing program in the Gulf of Mexico. The 2012-2017 PEIS concludes that emissions due to the oil and gas leasing program would not result in any exceedance of the NAAQS.
- The Draft PEIS for BOEM's 2017-2022 leasing program also concludes that the 2017-2022 program will result in a minor contribution to criteria pollutant concentrations, that the NAAQS will not be violated, and that the PSD increments will not be exceeded.

These findings by BOEM demonstrate that the rule is unnecessary. Additional information on this topic is found in Section 1.3 above and in the primary comment document.

2.2 Principle 3: Identification of Alternatives to Regulation

E.O. 12866 further requires that BOEM identify and explore alternatives. BOEM's IRIA focused on credit trading and the use of offsets but did not explore the costs of alternatives or even the cost of the No Action Alternative. Furthermore, BOEM did not research the true costs of NO_x credit trading.

It appears unlikely that affected entities can access \$3,000 per ton NO_x credits, as cited in the IRIA (see Section 1.5 of this report for a description of existing NO_x credit markets). Furthermore, BOEM neglected to consider the impacts of this rule on existing NO_x emission trading markets, and how the rule would impact demand for NO_x credits.

2.3 Principle 5: Design a Regulation that is Cost-effective and Predictable

E.O. 12866 necessitates that BOEM design regulation in the most cost-effective manner, with a focus on incentives to innovation, consistency, predictability, costs of enforcement and compliance, flexibility, distributive impacts, and equity. Predictability is absent in this rule, largely due to the lack of clarification in the rule and the uncertainty over its true costs of implementation (see Section 3 of this document). In the IRIA, BOEM states that "the estimated impact and proposed rule compliance costs are tremendously uncertain" (page 17 of the IRIA).

BOEM failed to consider distributive impacts and impacts to small businesses in its IRIA, although BOEM acknowledges that the true costs of implementation may have considerable distributive impacts, "Based on this analysis, BOEM concludes that this proposed rule may have a significant economic impact on a substantial number of small entities" (page 87 of the IRIA).

While BOEM believes it is introducing regulatory flexibility by allowing for participation in NO_x markets, such markets are nonexistent or lack sufficient volume to accommodate the increased usage that the rule may generate. Consequently, this solution could be more expensive and have less regulatory certainty than BOEM suggests.

2.4 Principle 6: Demonstrate that the Benefits of the Regulation Exceed the Costs

E.O. 12866 mandates that the benefits of the regulation exceed the cost. While noting that there are many uncertainties in its analysis, BOEM calculates that the cost of the rule exceeds the benefits, and acknowledges that the benefits are difficult to determine with any degree of certainty.

2.5 Principle 7: Use the Best Reasonably Available Science Information

E.O. 12866 dictates that BOEM must base its decisions using the

best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation (p. 2).

In preparing this rule, BOEM failed to justify the necessity of the rule using best science and also failed to use best economics to consider the true impacts of the rule. Some of the science is still under review for the Offshore Emissions Cost Model.

It is impossible to know the future result of the exemption studies for the GOM or Arctic OCS. Accordingly, BOEM is not estimating the potential results or impact of this ongoing study in the estimated compliance costs for this rulemaking.

IRIA, page 20

The results of the ongoing GOM and Alaska regional exemption studies will significantly change the number of plans required to model. BOEM does not have a basis at this time to estimate the direction or magnitude of this change.

IRIA, page 21

The ongoing environmental studies in the GOM and Alaska will determine if the current exemption formulas should be revised to be protective of the current NAAQS. The proposed rule should not be considered until after the results of the studies are available.

2.6 Principle 10: Avoid Regulations that are Duplicative with Other Regulations

The tenth principle in E.O. 12866 states that agencies are to “avoid regulations that are inconsistent, incompatible, or duplicative with its other regulations or those of other Federal agencies” (p. 2). This rule proposes modifications to definitions and procedures that exceed BOEM’s mandate under OSCLA. BOEM’s proposed revisions further conflict with MARPOL governance of support vessels as administered by the USEPA and US Coast Guard.

2.7 Table Summary of Key E.O. 12866 Principles

Table 2.1 - Summary of Failure to Meet Principles of Regulation	
E.O. 12866 Principle	Draft IRIA
1: Justify need for the rule	BOEM does not provide justification for the rule (Sections 1.1- 1.3, 2.1)
3: Consider alternatives	BOEM does not thoroughly consider alternatives (including a No Action Alternative) (Section 1.4, 1.6, 2.2)
5: Design cost effective and predictable regulation	The rule is not cost effective BOEM does not consider all cost, distributive, or equity impacts BOEM acknowledges considerable uncertainty in regulatory design and impacts (Section 1.4-1.9, 2.3)
6: Benefits must exceed costs	By BOEM's own calculation, the costs exceed the benefits (Section 2.4)
7: Base decisions on best available science and economics	BOEM does not use best available science to determine necessity of rule BOEM does not use best available economics to determine consequences of rule Science is still under review (Section 1.2-1.5, 2.5)
10: Avoid duplicative regulations	Regulation of support vessels is duplicative of MARPOL regulations Duplicates existing successful regulations (Section 2.6)

3 Technical Analysis of Cost Estimates

Throughout the IRIA, BOEM requested industry estimates of compliance costs. The costs set forth below were developed by a survey conducted by RE of industry representatives. Note that not all compliance costs are represented in this section, primarily those where RE has calculated costs that differ from BOEM.

BOEM provides their estimated industry compliance costs in Table 15 of the IRIA. The estimates presented in this section refer to and can be compared to costs included in Table 15 (unless otherwise noted) and were developed by RE based on past industry experience. In cases where ranges have been identified for cost estimates, the lower end of the cost range is used in the calculations, providing a conservative cost estimate. A summary and comparison of the IRIA estimates and RE estimates is presented in Table 3.1 below.

Regulation Change	BOEM		Ramboll Environ	
	Year 1 Cost	10-Year Cost (3%)	Year 1 Cost	10-Year Cost (3%)
550 Subpart B				
Contents of Exploration Plans	\$260,400	\$2,714,231	\$2,728,000	\$23,270,393
Contents of DPP and DOCD	\$444,154	\$4,402,546	\$5,766,000	\$49,185,150
Total Subpart B	\$704,554	\$7,116,777	\$8,494,000	\$72,455,543
550 Subpart C				
Air Quality Analyses in Plans	\$1,721,624	\$76,999,522	\$14,848,700	\$112,075,776
Emission Reduction Measures	\$17,290,668	\$139,946,251	\$66,143,391	\$600,498,895
Monitoring & Reporting	\$3,161,244	\$65,248,849	\$439,556,749	\$2,633,021,132
General	\$1,240	\$10,577	\$1,240	\$10,577
Total Subpart C	\$22,174,776	\$282,205,199	\$520,550,080	\$3,345,606,381
550 Subpart J				
Collect, maintain & submit all air quality records	\$62,496	\$533,104	\$62,496	\$533,104
TOTAL	\$22,941,826	\$289,855,080	\$529,106,576	\$3,418,595,027

²² Note that costs in Table 3.1 have been aggregated for easier comparison with BOEM's Table 15 in the IRIA. The subsequent tables below (Table 3.2 through Table 3.25) show direct comparison of costs within the disaggregated category, so the totals do not match-up with Table 3.1. For example, under "Contents of Exploration Plans" cost category, we only compare the cost estimates for "Collect, maintain & submit all air quality & modeling documentation."

3.1 Air Quality Modeling and Analyses Costs

There are several sources of air dispersion modeling costs recognized by BOEM. These are costs for collecting, maintaining and submitting modeling documentation; for submitting expanded air emissions and compliance data for Exploration Plans (EPs), Development and Production Plans (DPPs), and Development Operations Coordination Documents (DOCDs) above the emission exemption threshold (EET); and for air quality analyses in plans. Each is described below citing the estimates developed by BOEM and RE.

3.1.1 Collecting, Maintaining, and Submitting Air Quality and Modeling Documentation

For the exploration plans, BOEM estimates that the collection, maintenance, and submittal of all air quality and modeling documentation will result in 2,200 annual burden hours, or 20 hours for 110 changed plans. Note that while BOEM estimates the annual number of changed plans as 110, it is possible that the number of plan re-submittals will increase significantly due to new proposed rule section 550.280(a) that prohibits use or substitution of any emission source that is not identified in the plan. Based on historical industry experience, we estimate that the hour burden is 100-200 per plan, resulting in 11,000 to 22,000 annual burden hours. This is an estimate of the burden to collect the considerable amount of data for each emission source, estimate emissions, prepare plans, and identify the maximum projected emissions for each criteria and major air pollutant by calculating the annual rate, maximum 12-month rolling sum, and the maximum peak hourly rate as required by proposed rule section 550.205(e). This estimate does not include modeling analyses and ERM/BACT evaluations. For consistency, throughout this analysis we utilize the same hourly cost used by BOEM of \$124 per hour. Based on industry experience, which has informed our calculations, assuming 110 changed plans, each with an hour burden of 100-200 hours annually, the additional hour burden will result in a 10 year cost of \$13.6 million. This equates to a net present value (NPV) cost of \$11.6 million when discounted at three percent. By comparison, BOEM estimated a 10 year cost of or NPV cost of \$2.2 million (see Table 3.2), which is significantly underestimated.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Contents of EPs	110	\$198,400	\$2,185,358
RE	Contents of EPs	110	\$1,364,000	\$11,635,197

For DPP and DOCD, BOEM estimates that the collection, maintenance, and submittal of all air quality and modeling documentation will result in 3,100 annual burden hours, or 20 hours for 155 changed plans. While we agree that approximately 155 plans will need to be updated, based on industry experience, we estimate that the hour burden is 200-400 per plan, resulting in 31,000 to 62,000 annual burden hours. This is an estimate of the burden to collect the considerable amount of data for each emission source, estimate emissions, and prepare the air quality portion of the plans. This estimate does not include modeling analyses and ERM/BACT evaluations, but does include burdens for collecting emissions information from installation

vessels and additional hours for determining if consolidation of facilities is required. Based on historical industry experience, the additional hour burden will result in a 10 year cost of \$38.4 million (\$32.8 million NPV). BOEM's estimate of a 10 year cost of \$3.6 million (\$3.1 million NPV) is therefore inaccurate (see Table 3.3).

Table 3.3 - Collect, Maintain, and Submit Air Quality and Modeling Documentation				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Contents of DPP and DOCD	155	\$289,154	\$3,080,364
RE	Contents of DPP and DOCD	155	\$3,844,000	\$32,790,100

3.1.2 Submitting Expanded Air Emissions and Compliance Data for EPs with Air Emissions Above Exemption

For the EPs, BOEM estimates that only 20 plans will be subject to submitting expanded air emissions and compliance data. It is uncertain if the proposed requirements will increase the number of plans that exceed EETs because new EETs will not be completed until 2020. The change in accounting for Mobile Support Craft (MSC) emissions will increase facility totals, and consolidating facilities will likely cause more plans to exceed thresholds. Therefore, the number of plans affected may be closer to the estimated total number of plans (110, as estimated by BOEM). It is possible that a greater number of resubmittals will be required due to new proposed rule section 550.280(a), which prohibits use or substitution of any emissions source not identified in the plan. Furthermore, there is an additional burden required for a plan that exceeds EETs (i.e. over and above a “base plan” that does not exceed thresholds), resulting in an hour burden of 100 hours per plan, not the 25 hours estimated by BOEM. This increases the annual burden hours from the 500 (estimated by BOEM) to 11,000. Due to these increases, BOEM's 10-year cost estimate of \$620,000 (\$528,873 NPV) is actually closer to \$11.6 million NPV (see Table 3.4). Also, this estimate does not take into account the unclear regulatory framework. Under the current regulatory framework, operators may self-mitigate their air emissions such that the plan emissions remain under the EET. It is not clear if the proposed rule will allow such self-mitigation and as such, more plans may exceed the EET and would require additional analysis (e.g., modeling, ERM, etc.).

Table 3.4 - Submitting Expanded Data for Plans Above Exemption				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Exploration Plans	20	\$62,000	\$528,873
RE	Exploration Plans	110	\$1,364,000	\$11,635,197

For DPPs and DOCDs, BOEM estimates that only 50 plans will be subject to submitting expanded air emissions and compliance data. It is uncertain if the proposed requirements will increase the number of plans that exceed EETs because new EETs will not be completed until 2020. The change in accounting for MSC emissions will increase facility totals, and consolidating facilities will likely cause more plans to exceed thresholds. Therefore, the number of plans affected may be closer to the estimated total number of plans (155, as estimated by BOEM). Furthermore, there is an additional burden required for a plan that exceeds EETs (i.e. over and above a “base plan” that does not exceed thresholds), resulting in an hour burden of 100 hours per plan, not the 25 estimated by BOEM. This increases the annual burden hours from the 1,250 (estimated by BOEM) to 15,500. Due to these increases, BOEM’s 10-year cost estimate of \$1.5 (\$1.3 million NPV) is actually closer to \$16.4 million NPV (see Table 2.4).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	DPPs and DOCDs	50	\$155,000	\$1,322,181
RE	DPPs and DOCDs	155	\$1,922,000	\$16,395,050

3.1.3 Air Quality Analyses in Plans

BOEM estimates that across all reporting and recordkeeping requirements only 406 new plans and consolidations of existing plans will need to be submitted to meet the air quality analysis requirements in the proposed rule. This encompasses:

- conducting the required analysis and modelling for expanded air emissions and for those criteria and major precursor air pollutants that exceed the threshold and compliance requirements;
- submitting modelling reports;
- reporting/consolidating emissions data from multiple facilities if required;
- submitting revised air emissions plans, as required;
- requesting exceptions and obtaining approvals;
- providing additional information and analysis as required for plan approval;
- obtaining approval of all modelling protocols and meteorological data sets; and
- providing BOEM with copies of and access to protocols and all required information.

We believe that as a result of these requirements, two to three times as many responses as estimated by BOEM will be required, roughly 924 -1,272 in total. This is for multiple reasons outlined below.

The IRIA estimates up to 110 EPs and 235 DOCDs (a total of 345 plans) will receive annual air quality reviews, and therefore require modeling analysis for air pollutants over the analysis period. We believe 50-100% of these plans will require modeling analysis, not just 87 of them, due to the change in accounting for MSC emissions effectively increasing facility totals, the requirements for consolidating, and the uncertainty of changing EETs, which collectively will

likely cause more plans to exceed thresholds. The range of hours is wide (increased to 80-200 hours per plan, from a BOEM estimate of 38 hours per plan) because it is unreasonable to assume that 38 hours is sufficient to manage the air quality modeling and gather all input data from relevant vessels. There is uncertainty in the mechanisms to prepare modeling (changing dispersion models), new modeling requirements (AAI modeling), and changing compliance points (receptors in non-attainment areas and on the State seaward boundary), which leads to the large estimated range in hour burden per plan.

In addition to the hour burden on operators to collect data, there is an additional cost for third party consultants to perform the modeling work. For additional plans that will now require modeling and analysis under the proposed rule, this could cost an additional \$20,000 to \$100,000 per plan, resulting in an additional cost burden of \$14.5 million NPV (see Table 3.6). These costs differ slightly from the IC Burden estimate contained in previously submitted comments by the American Petroleum Institute (API)²³ and the Offshore Operators Committee (OOC)²⁴ in that the previous IC Burden comments included a \$10,000 cost estimate for incremental modelling/analysis for the full amount of plans (171-345). It was determined that \$10,000 amount was already included for those 171-345 plans in the \$20,000 to \$100,000 cost range for additional plans requiring modelling / analysis. The double counting error due to the uncertainty of how many of the total plans would be included in which category has been corrected.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Conduct Analysis and Modeling	87	\$409,944	\$3,496,905
RE	Conduct Analysis and Modeling	171	\$1,696,320	\$14,469,954

BOEM estimates that reporting and consolidating air emissions data from multiple facilities will only require 15 consolidations. We estimate that roughly 282, or 80% of DOCDs and 50% of EPs will require consolidation, again due to the change in accounting for MSC emissions effectively increasing facility totals, the requirements for consolidating facilities, and the uncertainty of changing EETs, collectively will likely cause more plans to exceed thresholds, which, in turn, will increase the number of plans that will require consolidation. Furthermore, the proposed rule requires that plans be recertified every ten years, such that the existing facility would have to reassess total complex emissions considering attributed emissions from MSCs and emissions from other facilities if consolidation is required. This again increases the likelihood of exceeding the EET. Consolidating plans could result in an additional cost of \$6 million NPV (see Table 3.7).

²³ <https://www.regulations.gov/document?D=BOEM-2013-0081-0042>

²⁴ <https://www.regulations.gov/document?D=BOEM-2013-0081-0041>

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Consolidations	15	\$37,200	\$317,324
RE	Consolidations	282	\$699,360	\$5,965,683

We agree with BOEM that it will be 20 hours per consolidation. We stress that this 20 hours does not include any additional modeling, ERM/BACT evaluations, or plan resubmissions that may be required a consolidation of plans that results in an exceedance of an EET. Additionally, BOEM underestimates the significant cost for air emissions consultants to prepare modeling protocols. For these reasons, we reiterate that the 20 hours burden does not encompass all the requirements that may be necessitated by the proposed rule.

Additional information may be required to be submitted for a plan to be approved. This could result in added cost, estimated by BOEM to be \$3.2 million NPV. We agree with BOEM estimates for this calculation (see Table 3.8)

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Additional approval information	300	\$372,000	\$3,173,235
RE	Provide Additional Info	300	\$372,000	\$3,173,235

While BOEM assumes only 4 submissions will require approval of all modeling protocols and meteorological data sets, industry experience indicates that the number of submissions that will require full approval will be from 171 to 345. This aligns with the estimated number of plans that may potentially require modeling under the proposed new requirements. We agree with BOEM that it will take 5 hours for operators to review modeling protocols, but there is an additional \$5,000 to \$20,000 cost per plan for a consultant to prepare the protocols. The increase in number of submissions, and additional third party cost for developing the protocols, results in an additional 855-1,725 hours of burden to the operator, and an additional \$947,023 (NPV) worth of external cost for developing the modeling protocols (see Table 3.9).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Protocol approval submittals	4	\$2,480	\$21,155
RE	Protocol approval submittals	171	\$111,020	\$947,023

In total, this increases the 10-year cost for air quality analyses in plans to \$112 million NPV as compared to BOEM's estimate of \$77 million NPV. (See Table 3.1).

3.1.4 Additional Modeling Costs

On page 19 of the IRIA, BOEM states, "If modeling shows projected emissions at 95% or more of a SIL, operators must remodel following any emission reduction measures or addition of aircraft emissions and applicable emissions from onshore support facilities". This iterative modeling process could imply additional modeling costs that are not considered.

On page 23 of the IRIA, BOEM states,

[The] modelling of MSC emissions may require multiple model runs with MSCs modelled in different possible locations to identify the worst-case impact on the receptor points.

This procedure is imprecise and could result in uncertain costs.

3.2 Cost of Photochemical Grid Modeling

The number of instances where photochemical modeling may be required will likely be driven by exceedances of NO_x and VOC thresholds, which are considered ozone precursors. Although it is difficult to estimate how many NO_x or VOC exceedances will occur, an assigned value of "0 instances" is clearly inappropriate. Due to the significant changes in the proposed rule, exceedances of NO_x and VOC thresholds will increase and may impact 50-100% of all plans. The range of impacted plans is large due to uncertainty in the proposed rule. In addition, photochemical modeling costs could range from \$40,000 to \$80,000 per analysis, based on industry modeling expert analysis²⁵. Assuming 50-100% of plans are impacted, this results in an

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Photochemical Grid Modeling	0	\$0	\$57,015,915
RE	Photochemical Grid Modeling	171	\$6,840,000	\$58,346,587

additional cost of up to \$58 million NPV (see Table 3.10).

²⁵ RE expert provided the estimate based on industry experience.

3.3 Emissions Credits Costs

An analysis of NO_x emission credit markets and costs is completed in Section 1.5, and is summarized here.

While BOEM assumes a NO_x emission credit price of \$3,000 per ton in the IRIA, this price is not reflective of existing NO_x emission credit markets. In Louisiana non-attainment areas, NO_x emission credits range from \$18,000 – \$25,000 per ton. In Texas non-attainment areas, NO_x emission credits cost \$53,000 to \$65,000 per ton, and NO_x emission credits that can be used for VOC attainment cost \$90,000 to \$125,000 per ton.

No markets for SO_x emissions currently exist in Louisiana or Texas and the costs of establishing a new market can be significant and have not been studied by BOEM. And there are currently no markets for PM_{2.5} emissions in any state. Furthermore, BOEM has not studied the impact of this proposed rule on existing NO_x emission credit markets and other market participants.

3.3.1 Requesting VOCs or NO_x Waiver for ERM

BOEM assumes that only one request for VOCs or NO_x waivers will be filed annually. The requirements for VOC and NO_x waivers described in the proposed rule are vague and unclear. Based on the proposed rule text, it is impossible to estimate the associated burden, so we use BOEM's estimate for this calculation (see Table 3.11).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Request Waivers	1	\$124	\$1,058
RE	Request Waivers	1	\$124	\$1,058

3.3.2 Notify BOEM if ERM are Disabled or Unavailable

BOEM assumes that there will be 2 notifications annually. It is extremely difficult to estimate the number of times an ERM may become disabled. The proposed rule will likely significantly increase the number of ERMs required and operators will establish compliance programs to ensure they are implemented and maintained. Yet, the reliability of ERMs is unknown for offshore operations (where conditions are harsher than onshore and space is extremely constrained for spare parts, support personnel, etc.). The proposed rule does little to clarify the consequences of exceeding a 90-day extension and it is unclear what the cost implications of this notification will be. For completeness we use BOEM's estimate for this calculation (see Table 3.12).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	BOEM Notifications	2	\$496	\$4,231
RE	BOEM Notifications	2	\$496	\$4,231

3.3.3 Notify Appropriate State Air Quality Control Jurisdiction of Proposal to Require Emission Offsets. Revise SIP to Include New Information

BOEM estimates that there will be one notification with one hour of burden. We believe that the annual burden hours are 2 to 4 hours, since a qualitative analysis will be required to justify why a previously submitted plan should be approved according to the old standard (see Table 3.13).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	State Notifications	1	\$124	\$1,058
RE	State Notifications	1	\$248	\$2,115

Note that this does not reflect the complexity of emissions offset markets. As described further in Section 1.5, the use of emissions offsets is a highly complex process that involves requirements well beyond a notification to a State air quality control body. The mechanisms for obtaining and using emissions offsets are vague and unclear in the proposed rule, raising numerous questions on the associated impact.

3.3.4 Request a Departure from Compliance with the New or Revised Ambient Air Quality Standards and Benchmarks (AAQSB)

BOEM estimates that 2 requests will be filed annually with an annual hour burden of 2 hours per plan. We think that it is more likely that 10 plans will be filed annually with an annual hour burden of 20 to 200 hours per plan, but this estimate is highly dependent on how often the AAQSB are revised and the scope of any future revisions. This could increase the 10 year cost from \$4,231 NPV (assumed by BOEM) to RE's estimate of \$211,549 (see Table 3.14). In addition, the number of affected plans will depend on the timing of any future AAQSB revisions, which is difficult to predict and plan for in advance.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Request Departures	2	\$496	\$4,231
RE	Request Departures	10	\$24,800	\$211,549

3.4 Cost to Add SCR for Gulf of Mexico (GOM)

BOEM estimates that documenting results of ERM analysis will require 50 hours per submission and that there will be 12 submissions per year. ERM and BACT analysis are highly case-by-case specific. 50 hours represents a reasonable burden estimate for a relatively simple case; however, more complex cases (e.g. for consolidated facilities) likely will require more complex and time-consuming analysis, potentially up to 500 hours per plan. In addition, revised

estimates are aligned with the number of plans that may potentially require ERM and BACT review under the proposed new requirements (50-100% of the total number of plans). This hourly burden is estimated to equate to a cost burden of \$10,000-\$75,000 per ERM and BACT evaluation because it is expected that third-party consultants will be utilized to conduct such analyses. This could increase BOEM's 10-year cost for documenting results of ERM analysis from \$25.6 million (\$21.4 million NPV) to \$128.3 million (\$109.4 million NPV) (Table 3.15).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Submissions	12	\$1,400,000	\$21,436,378
RE	Submissions	171	\$12,825,000	\$109,399,851

There are four primary concerns about the selective catalytic reduction (SCR) BACT cost calculations BOEM provides in the IRIA. These concerns include 1) assuming SCR would be the only type of BACT required, 2) the underestimation of assumed capital costs of applying SCR to vessel engines for each of the three vessel types for which BACT may be required (drillships, semisubmersibles, and jackups), 3) the inconsistencies in BOEM's calculations of SCR day rate increases for all three vessel types, and 4) excluding in the cost estimations the potential need to include ERM for production platforms.

First, BOEM included the cost of implementing SCR as the only BACT option, stating that NO_x is the most likely pollutant to require reductions under the proposed rule. If other pollutants trigger BACT, different types of controls would be required. For example, although there is no official SIL for PM_{2.5} at present, the NAAQS is very stringent and the SIL (when established) is likely to also be very stringent. Therefore, as the costs to apply the required BACT for other pollutants have not been considered in BOEM's analysis, the cost to add BACT may be underestimated.

Second, the SCR capital costs that BOEM did include in the analysis are not necessarily representative for the types of vessels for which BACT may be required. For example, although BOEM provided three example capital costs of applying SCR to drillship engines, all of which were greater than \$30,000 per day as a day rate premium per drillship (ranging between \$32,900 and \$37,500 in 2013 or 2014 dollars), it assumed a lower cost of \$30,000 per day (in 2015 dollars) as the representative cost. This underestimates the true cost of the proposed rule for each drillship requiring SCR, as well as the full fleet of drillships (assumed to include 30 in the GOM) by a large degree.

For semisubmersibles and for jackup rigs, BOEM developed the cost premium by using a slightly lower percentage increase than for drillships due to less complicated installation of SCR units on these vessels. These estimates seem to be arbitrary, and offer a poor justification for the costs estimates provided. Based on industry experience installing and operating SCR controls, more representative costs for SCR installation by rig type (converted to day rate

premiums for comparison to BOEM’s estimates by dividing the total of the annualized capital costs plus annual operation costs by 365) are reflected in Table 3.16 below.

Rig Type	RE Day Rate Premium	MODUs	GOM Cost Per Day
Jackup	\$6,083	10	\$60,826
Semisubmersible	\$21,289	10	\$212,890
Drillship	\$39,537	30	\$1,186,100
Total			\$1,459,816

Third, the costs shown in Table 8 of the IRIA and stated to be the “relevant costs used in the analysis” are not consistent with the process BOEM states it used. Table 8 as it appears in the IRIA is shown below:

Cost Category	Cost
Jackup Unloaded Day Rate	\$150,000
Semisubmersible Unloaded Day Rate	\$470,000
Drillship Unloaded Day Rate	\$550,000
BACT Jackup Day Rate Cost Increase (%)	2.5%
BACT Semisubmersible Day Rate Cost Increase (%)	1.9%
BACT Drillship Day Rate Cost Increase (%)	2.7%
BACT Jackup SCR Day Rate Cost Increase (\$)	\$7,500
BACT Semisubmersible SCR Day Rate Cost Increase (\$)	\$20,000
BACT Drillship SCR Day Rate Cost Increase (\$)	\$30,000

However, when attempting to calculate the day rate cost increase for each of the three types of vessels (Jackup, Semisubmersible, and Drillship) using the figures in Table 8, the calculations do not provide the results shown in Table 8, as shown in the following equations:

- 1) BACT Jackup SCR Day Rate Cost Increase (\$) = Jackup Unloaded Day Rate * BACT Jackup Day Rate Cost Increase (%), but
 $\$7,500 \neq \$150,000 * 2.5\%$; $\$3,750 = \$150,000 * 2.5\%$ OR $\$7,500 = \$150,000 * 5.0\%$
- 2) BACT Semisubmersible SCR Day Rate Cost Increase (\$) = Semisubmersible Unloaded Day Rate * BACT Semisubmersible Day Rate Cost Increase (%), but

$\$20,000 \neq \$470,000 * 1.9\%$; $\$8,930 = \$470,000 * 1.9\%$ OR $\$20,000 = \$470,000 * 4.3\%$

- 3) BACT Drillship SCR Day Rate Cost Increase (\$) = Drillship Unloaded Day Rate * BACT Drillship Day Rate Cost Increase (%), but $\$30,000 \neq \$550,000 * 2.7\%$; $\$14,850 = \$550,000 * 2.7\%$ OR $\$30,000 = \$550,000 * 5.5\%$

These apparent inconsistencies need to be addressed and corrected, or documented by BOEM.

Finally, the IRIA states on page 27, “BOEM’s analysis of operator submitted plans indicates that MODU drilling is the primary activity causing plan’s emissions to exceed the emission threshold. Therefore, the analysis of required ERM is closely related to the expected drilling activity.” However, considering that MODU drilling will many times be consolidated with a production platform, it would seem that the production facility may also be subject to ERMs and/or BACT. Therefore, the analysis included in the IRIA is incomplete and BOEM’s supposition that MODUs are the only impacted activity is not realistic, resulting in an underestimation of costs associated with the proposed rule. BOEM only included the purchase of emission credits in its cost analysis, resulting in a 10-year NPV of \$117.2 million. RE included SCR costs as the most likely alternative (BACT), which have a 10-year NPV of \$397.7 million (Table 3.18).

Table 3.18 - Cost of ERM / BACT for Gulf of Mexico (GOM)				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Emissions Credits purchased	5,294	\$15,880,500	\$117,150,543
RE	SCR Systems Installed	5	\$43,293,015	\$397,744,212

3.5 Cost to Install and Operate PEMS

BOEM estimates that there will be 12 submissions required to demonstrate actual emissions data or other information to verify compliance with a previous approved plan, each requiring 16 hours. However, based on historical industry experience, the hours required to report actual emissions data is estimated as two hours per month or 24 hours annually. The number of potentially affected facilities is estimated to be 858 to 1,143 facilities annually over the first three years. This estimate is based upon the number of platforms in the Gulf of Mexico (2,480) plus the estimated number of MODUs (50) plus the estimated number of vessels (900). RE assumes that all required compliance demonstrations would be required within the first 3 years after the rule is finalized. Under the proposed rule, potentially 75-100% of those total facilities could require some type of compliance demonstration. Therefore, the 10-year NPV for reporting actual emissions data is not \$4.4 million as estimated by BOEM, but at least \$21.8 million, based on the lower end of the range (858) (Table 3.19).

Table 3.19 - Report Actual Emissions Data				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	reports submitted	12	\$126,159	\$4,445,190
RE	reports submitted	858	\$2,553,408	\$21,781,088

BOEM assumes that only non-certified engines on vessels would require PEMS, and assumes there are 682 GOM vessels. As such, on average three (3) engines per year may require PEMS (page 52), or 30 total engines over the 10-year analysis. BOEM further states that there is uncertainty in that number but that it believes the number is very small. BOEM estimates an annual hour burden of 36 hours per engine. We estimate the hours required to install and operate a PEMS are more likely 80-100 hours for engineering and installation and an additional 1 hour per day per system for operation and maintenance, resulting in 445-465 hours per year for each system installed. Based on current industry estimates of 2,480 platforms, 50 MODUs, and 900 vessels, and 75-100% of facilities potentially requiring a PEMS, the estimated number of total PEMS installations ranges from 2,573-3,430 over the analysis period. The annual Offshore Marine Service Association member vessel census (which excludes nonmembers vessels) is typically around 800 - 900 vessels. Therefore, the BOEM estimate of 682 is too low. RE believes 900 GOM vessels is a reasonable estimate. Our cost estimate is based on the number of facilities rather than number of impacted engines because multiple engines on a single facility could be monitored with a single PEMS. However, in some cases individual engines may require a dedicated PEMS, resulting in estimates that would be potentially higher than what is included in our cost estimate. The analysis provided herein assumes the lower value of 858 PEMS systems installations per year for the first three years, as a conservative estimate, and that all required PEMS systems would be installed within the first three years after the rule is finalized. BOEM provides an estimate for PEMS installation costs ranging between \$100,000 and \$156,250 per system, with annual operating costs of \$3,750. This estimate is lower than historical industry experience indicates. BOEM developed its estimate by dividing the total cost of a PEMS by the number of engines it monitors to calculate a cost per engine. RE developed a per system estimate. The largest cost of a PEMS is the system itself and its installation. As the number of engines is added to the system the cost per engine will go down. BOEM made an error in their estimate on a per engine basis since cost and engine are not a linear relationship. The cost estimate should be calculated per facility and system.

Table 3.20 - Install and Operate a PEMS				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Engines (systems installed)	3	\$78,000	\$3,497,441
RE	Facilities (systems installed)	858	\$222,993,333	\$785,691,267

We believe a more accurate estimate for PEMS capital cost is \$250,000 to \$750,000, based on actual historical industry installation costs²⁶. All PEMS systems are assumed to be installed within the first three years, and maintenance and calibration costs are expected to be approximately \$10,000 per system annually for each of the 10 years included in the analysis. This results in a 10-year NPV of \$785.7 million, compared to the low estimate provided by BOEM of \$3.5 million (Table 3.20) An additional concern is whether the PEMS and stack testing industry have the capacity to manufacture, install, and test so many systems within such a short timeframe. Even if it does, it will not be a seamless process and it could be costly, the extent of which has not been evaluated by BOEM.

While RE's cost estimates are highly variable and each facility will differ based on the size of the system, the number of engines being monitored, facility space and weight constraints, as well as a number of additional variables, we believe these estimates are considerably more accurate than those posited by BOEM.

It should also be noted that BOEM states,

While the monitoring of actual emissions is likely to be more accurate than calculating emissions through emissions factors and fuel consumption, BOEM does not have a basis at this time to estimate the accuracy improvement for CEMS and PEMS compared to the current standard practice,

IRIA, page 51

and

BOEM does not expect that emissions would be reduced by any material amount through monitoring of actual emissions (with PEMS) versus estimating plan emissions with emissions factors and fuel/activity information provided under § 550.312

IRIA, page 71.

These statements appear to support **not** requiring PEMS. These statements need to be reconciled with the elements of the proposed rule which are unclear as to the specific monitoring required by the rule.

3.6 Costs to Monitor/report Fuel Usage and Activity Data in GOM

BOEM estimates that retaining monthly fuel information for each source on a determined schedule for 10 years will result in 48 hours of burden per facility per year, with 265 responses required annually resulting in an annual burden of 12,720 hours. Based on this, the first year cost is estimated at over \$1.1 million dollars, amounting to the 10-year NPV of more than \$40.0 million (Table 2.20).

Forty-eight hours is a reasonable burden estimate if fuel usage is tracked at the facility level (total fuel consumed). However, the proposed rule language seems to indicate that fuel tracking will be required for each engine or other emission source. Under this scenario, a more

²⁶ Provided by OCS operators and vendors through a survey conducted by RE.

appropriate estimate would be 300 to 600 hours for fuel tracking, resulting in an annual burden of 257,400 to 685,800 hours. The number of potentially affected facilities is the same as the estimated number of PEMS. As presented previously, RE estimates 858 to 1,143 facilities annually would require PEMS, which is based on our current GOM estimate of up to 2,480 platforms, 50 MODUs, and 900 vessels.

The analysis provided herein assumes the lower value of 858 facilities per year for the first three years. However, this is a conservative estimate since some facilities will have multiple engines. An estimate of the total number of engines in the GOM would require significantly more time to estimate than the comment period made available. Based on the conservative estimate of 300 hours in 858 facilities, and using BOEM's hourly rate of \$124, the cost of retaining monthly fuel information for each source is estimated at \$31,917,600 for the first year (Table 3.21). Therefore, the 10-year NPV for retaining this monthly fuel information for each source for 10 years is not \$40.0 million as estimated by BOEM, but about \$272.3 million, based on the low end of the range (858) (Table 3.21).

Table 3.21 - Costs to Monitor/Report Fuel Usage and Activity Data				
Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Retain monthly fuel information	265	\$1,135,430	\$40,006,709
RE	Retain monthly fuel information	858	\$31,917,600	\$272,263,602

Based on BOEM's estimates, the submittal of fuel logs or collection of facility and equipment usage information for MSCs will result in eight hours of burden per year, with 80 responses required annually, resulting in an annual burden of 640 hours. The first year cost of this is estimated at \$63,079 dollars, amounting to the 10-year NPV of about \$2.3 million (Table 3.22). These estimates are unrealistic. We estimate this burden to be 20 to 200 hours annually per vessel. The low end of the range of is based on monitoring total fuel consumption per vessel, while the high end of the range is based on monitoring fuel for each engine on each vessel. There could be 20 engines on one vessel, so the level of effort is much higher than BOEM estimates. MSCs also service multiple platforms so the apportionment of service for different facilities needs to be factored in which will takes additional time and effort. Given the low range estimate of the annual burden, the estimated number of vessels, and BOEM's hourly rate of \$124, we estimate the cost of submittal of fuel logs or collection of facility and equipment usage information for MSCs at \$2,232,000 for the first year (Table 3.22). Therefore, the 10-year NPV for this requirement is not \$2.3 million as estimated by BOEM, but over \$19.0 million (Table 3.22).

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Submittals	80	\$63,079	\$2,298,499
RE	Submittals	900	\$2,232,000	\$19,039,413

Most individual engines are not equipped to monitor individual fuel usage. In order to accomplish this, individual engine fuel meters will need to be installed on each engine. According to RE’s research, the estimated capital costs to install a fuel flow monitor and data logger system could range from \$10,000 to \$15,000 per engine. Offshore Service Vessels (“OSV”, which are MSCs) have at least two to as many as five main engines plus at least two generator engines. Based on data provided in Table 20 of the IRIA, there are close to 2,200 engines onboard OSVs utilized in the GOM. If fuel meters were installed on each engine onboard the fleet of OSVs servicing the GOM, the additional capital costs could be \$22,000,000 to \$33,000,000 greater than the cost outlined in Appendix A of the IRIA. This also does not include the costs to install fuel meters on the MODUs and Platform engines, which include an additional 4,500 engines as estimated in Tables 21 and 22 of the IRIA. Assuming the same estimated capital costs for installing fuel meters on OSVs, the total costs to install fuel meters on all MODUs, Platform, and OSV engines (6,750) could be an additional \$67,500,000 to \$101,250,000 over 10 years in nominal terms. Using a conservative estimate of capital costs to install a fuel flow monitor and data logger system of \$10,000 per engine, and assuming that these are installed on one-tenth of the total 6,750 engines in the first year, the cost for the first year is estimated at about \$6.8 million (Table 3.23). This amounts to the 10-year NPV of approximately \$57.6 million using a three percent discount rate.

Source	Type of Actions	Number of Actions Year 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Did not estimate	0	\$0	\$0
RE	Fuel flow meter installations	6,750	\$6,750,000	\$57,578,869

In addition to the equipment required to monitor fuel usage on each engine, Section 312(b) of the proposed rule requires the collection of hours of operation at each percent of capacity for each emission source, as well as other non-specified data for sources that would not otherwise be accounted for by fuel consumption logs. Due to the limited time available to prepare these comments, cost data for this equipment could not be collected; however, RE estimates that the actual costs could be significant. For example, for one newer vessel, according to industry experts it could cost approximately \$250,000 to install the software. There could be production losses as well.

3.6.1 Cost to Conduct Stack Testing

BOEM estimates that conducting stack testing and reporting stack testing results every three years will result in a 48-hour burden per test, with the 67 tests required resulting in an annual burden of 3,216 hours. The cost estimates provided by BOEM assume \$25,000 per stack test, resulting in a cost of \$1,675,000 annually for the estimated 67 stack tests. Based on this, the 10-year NPV for conducting stack testing and reporting results is about \$14.3 million using a three percent discount rate (Table 3.24).

BOEM underestimates these costs, and uses an unrealistic hourly burden to design, plan, conduct, and report each stack test. Also, BOEM's estimates do not take into account the fact that stack testing costs are not limited to the cost of the test operations alone. BOEM developed its estimate by dividing the total cost of a stack test by the number of engines. This is not an appropriate calculation since the cost of stack testing and engines is not a linear relationship. A significant cost component is the equipment and mobilization of the stack testing company. The cost estimates for stack testing should be based off of the number of facilities stack tested and then the number of engines tested at those facilities.

Stack test equipment and personnel will need to be mobilized leading to mobilization fees, and modifications to stacks and emissions sources may be required to enable stack testing to be performed, potentially resulting in additional costs. These modifications include installation of ports for testing, scaffolding and construction to access the stacks for port installation and testing and, in some cases, adding flume/lengths to stacks to allow testing. It is important to note that, practically speaking, stack testing will be a continuous process year to year given the extensive preparations (planning, test protocol development and approval, staff training of vendors, etc.), weather delays, disallowance of testing while drilling, etc. Many of these costs are not captured in BOEM's estimates.

RE estimates the hours required to design and plan one stack test at 80-120 hours, and actual stack tests are estimated to require 120-240 hours per test depending on the pollutants being tested and the number of engines included. Therefore, each stack test requires 200-360 hours.

The number of potentially affected facilities is the same as the number of PEMS that we estimate will be installed within the first three years following approval of the proposed rule, given that each PEMS will require a stack test at initial installation. RE estimates 858 to 1,143 facilities annually, which includes up to 2,480 platforms, 50 MODUs, and 900 vessels. It is assumed that all required PEMS systems would be installed within the first three years after the rule is finalized. Based on the number of facilities requiring stack testing and the number of hours needed to plan and conduct these, we estimate the annual burden at 171,600-411,480 hours. Using the conservative estimate of 200 hours required for each stack test, the lower value of 858 facilities per year for the first 3 three years, and the hourly rate of \$124, we estimate that conducting and reporting stack testing results every three years will cost \$21,278,400 in the first year (Table 3.24). Therefore, the 10-year NPV for conducting stack testing and reporting results is not \$14.3 million as estimated by BOEM, but over \$181.5 million, based on the low end of the range (858) (Table 3.24).

Source	Type of Actions	Number of Actions Yr. 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Testing and reporting results	67	\$1,675,000	\$14,288,090
RE	Testing and reporting results	858	\$21,278,400	\$181,509,068

As noted above, in addition to the hours required to design, plan, conduct, and report stack testing, there could be additional costs to mobilize engines and modify stacks and emissions sources to enable stack testing. A breakdown of estimated mobilization and modification costs are provided below:

- A. Modification of equipment to enable stack testing = \$15,000 per stack
- B. Mobilization Costs and One Engine test with 3 test runs per load and 3 engine loads (9 test runs per engine):
 - Gaseous Criteria Pollutants Only = \$120,000
 - Particulate Matter Additional Cost = \$25,000
- C. Each Additional Engine During the Same Mobilization:
 - Gaseous Criteria Pollutants Only = \$15,000
 - Particulate Matter Additional Cost = \$20,000

Based on these estimates, the cost for each engine to be tested is estimated at \$160,000 (\$145,000 for mobilization and testing, \$15,000 for modification of equipment to enable stack testing). Using the conservative estimate of 858 facilities tested per year, we estimate these costs at \$137,280,000 for the first year (Table 3.25). This differs from the previous estimate in IC Burden comments submitted by API and OOC. In those comments, we utilized the same number of facilities as estimated by BOEM and as were included in Tables 20, 21, and 22 of the IRIA. After further consideration, this updated cost includes our revised estimate of the number of facilities requiring stack testing (858 to 1,143). Based on this, the 10-year NPV for mobilization and modification costs associated with stack testing amounts to about \$1.2 billion using a three percent discount rate (Table 3.25).

Source	Type of Actions	Number of Actions Yr. 1	Year 1 Cost	10-Year Cost (3%)
BOEM	Tests conducted / results reported	67	\$66,464	\$566,951
RE	Tests conducted / results reported	858	\$137,280,000	\$1,171,026,245

In addition, normal production operations may have to be curtailed or shut-in to execute the testing, which could result in deferred production, or unproductive rig time (these costs are not addressed here). For MODUs, safety requirements limit stack testing to those periods between well drilling programs, which do not occur often. If an operator is forced to delay MODU drilling to make time to test, the operator could incur idle rig time costs. These costs are equivalent to the rig day rate which have typically been more than \$100,000/day.

Another issue not addressed in the IRIA is the availability of stack test vendors. There are few such companies prepared to test or that have experience with offshore installations, and, given industry experience, many delays complicating the mobilization of personnel are possible (weather delays or drilling program changes during a well, etc.). It is likely the stack test vendor population is not large enough in the GOM vicinity to support this testing in the short three year window required by the proposed rule. There could be additional costs to get this type of support from outside of the GOM and these costs are not addressed.

As presented in this section, it is clear that BOEM's total estimated costs differ substantially from RE's cost estimates. BOEM clearly understated the costs and overestimated the benefits.

4 Technical Analysis of Benefit Estimates

The following sections discuss BOEM's benefits estimates from the IRIA. As discussed in Sections 1.2 and 2.1 of this report, it is unclear how BOEM's defined benefits justify the costs of this rule. The shortcomings of BOEM's benefit estimates are discussed below.

4.1 Failure to Assess and Adequately Calculate Benefits

BOEM estimates the benefits of offshore emission reductions through use of the Offshore Economic Cost Model (OECM). Data contained in the model results were used to estimate the benefits of the new regulation. However, the resolution of the OECM model results is very wide (e.g. the same \$5,000/ton value of impact is assumed within a band of more than 100 miles in terms of the distance to the shore). Hence it is difficult to see how the agency can justify moving the measurement boundary out from the coast to the state submerged boundary (a distance of a few miles). The model resolution is too coarse to determine whether an actual change in distance will genuinely provide adequate benefits, if any.

BOEM acknowledges the uncertainty involved in quantifying these benefits:

It is very difficult to estimate and monetize benefits for NO_x emissions reductions offshore because of the distance of OCS operations from onshore population centers.

IRIA page 44

BOEM needed to estimate the impacts to onshore residents from offshore sources. The Agency used data generated from APEEP which contains data for only onshore impacts. That is APEEP uses data from within the contiguous US only and has no offshore component. Uncertainties associated with the dose-response functions used from the APEEP model are not considered. The standard errors associated with each of these components are not taken into account and no sensitivity analysis is provided.

BOEM has essentially drawn observations from a population of onshore impacts only and is using two variables - distance and compass bearing location - to predict offshore impacts using a third order fitted polynomial equation. There is no theory supporting the model specification. The model needs to be calibrated against actual offshore data. Otherwise it is merely speculative and provides no basis for the rule.

4.2 Qualitative Benefits

Some of the benefits that BOEM has identified are unlikely to be realized and the value of these benefits is indeterminate. For example, BOEM believes that one of the benefits of the rule is the increased flexibility in meeting emissions reductions because of the ability to purchase emission credits. As discussed earlier in this document, it is unlikely that NO_x emission credits will be less expensive than BACT, greatly increasing the cost of the rule.

BOEM also claims a benefit of increased oil and gas development potential in the States, stating,

To the extent that OCS emissions do not impact the States (due to effective air quality management by BOEM), the States would have a greater ability to approve new or incremental oil and gas development over state submerged lands or onshore

IRIA, page 83.

This is at best a counterintuitive argument since it seems to indicate that reduced OCS impacts to onshore areas will allow for more emissions to occur nearer to onshore areas.

Other items that are listed on pages 82 and 83 of the IRIA are qualitative benefits that “may” result from the adoption of the proposed rule. There are seven categories, each with a list of potential benefits. Despite the length of this list of purported benefits, not one is identified as a benefit that **will** occur. Instead, the suggestion is that the volume of additional reporting, data collection, paperwork, and increased cost to industry and the agencies, will possibly result in a net benefit.

It is inappropriate to justify this rule on the basis of these purported qualitative benefits, particularly where BOEM acknowledges the costs exceed these benefits.

BOEM claims that:

There are numerous non-monetized, qualitative benefits attributable to the rule that would provide for more regulatory certainty and an overall cleaner environment²⁷.

IRIA, page 83

BOEM should not use unquantified benefits to justify a rule where the costs exceed the benefits. It appears that BOEM did not attempt to quantify most of the benefits they identified, leaving the question of whether these benefits are actually significant enough to justify the heavy costs imposed by the rule.

Further, it is unclear if many of the unquantified benefits identified by BOEM would actually lead to realized benefits. For example, BOEM claims that the rule

could result in the reduction of VOCs, SO_x, CO, and PM emissions, which have not been quantified”, but acknowledges that “Co-benefits, such as emissions reductions of other pollutant emissions associated with the proposed controls for NO_x, have not been evaluated or quantified in this analysis.

IRIA, page 5

Later in the IRIA, however, BOEM raises concern that the unquantified benefits may not occur as a result of the rule:

²⁷ Department of the Interior. Air Quality Control, Reporting, and Compliance Initial Regulatory Impact Analysis. RIN: 1010-AD82. March 3, 2016. Page 83.

Similar to engine performance management systems, BOEM is not estimating co-benefits for other pollutant reductions other than NO_x due to the uncertain nature of these reductions and the uncertainty about when these reductions could be credited to the proposed rule.

IRIA, page 80

This acknowledgement reinforces that the unquantified benefit of a reduction of criteria air pollutant concentrations cannot be used to justify the heavy costs of this rule, since BOEM acknowledges that the rule may not actually cause these reductions.

BOEM concludes that:

Based on a consideration of the qualitative as well as quantitative factors related to the rulemaking proposal, BOEM's assessment is that the proposed regulation is necessary to achieve compliance with the requirements of the OCSLA and that its adoption would provide a net benefit to the public. However, BOEM estimates the quantified net benefits from emissions reductions measures are exceeded by the cost of the emissions reduction measures and the increased modelling and monitoring costs.

IRIA, page 83

BOEM insists that the qualitative benefits in addition to the quantitative benefits provide a net positive benefit to the public. This is unreasonable and speculative, considering that many of the qualitative benefits result in increased costs and other claimed benefits cannot actually be attributed to the rule. Furthermore, BOEM has not demonstrated that there is a problem that needs to be resolved, making the “benefits” and costs of the rule unjustified.

**APPENDIX C: RESPONSES TO BOEM'S SPECIFIC REQUESTS
FOR COMMENT ON RULE PROVISIONS**

In the preamble, BOEM has specifically solicited comments on approximately forty issues in the proposed rule that have not been fully developed or concretely proposed. Many of the issues that are undeveloped would be critical components of any final air quality regulatory program, and may have significant impact to offshore operators. Without fully developed proposals on these issues, the regulated community does not have a clear understanding of the scope of the proposed regulation and cannot provide meaningful stakeholder comment. Constructive feedback on many, if not most, of these requests involves detailed technical review and significant information gathering. Due to the compressed comment period, we were not afforded enough time to give these requests the full consideration and/or the technical analysis they warrant.

81 Federal Register	BOEM Request for Comment	Response and Comment Reference
Pg. 19724	BOEM requests comments and data on the extent of BC emissions from OCS-related operations and potential means of reducing such emissions and their negative effects. BOEM also requests comment on other factors, information, or data that BOEM should consider in its analysis of BC, either in connection with or in addition to its air quality regulatory analysis.	As discussed in Section 12.7, because black carbon is not related to compliance with the NAAQS, BOEM lacks the authority to regulate it.
Pg. 19731	BOEM would like comments on the appropriateness of potentially distinct emissions thresholds or threshold formulas for Alaska and GOM, and/or how these thresholds should be structured.	As discussed in sections 2.4 and 6.1, consistent with our overall position on revising EETs, BOEM should delay this decision until the scientific bases for EETs have been established. Until then, we have no basis for making a decision on this important issue. That said, we anticipate that different EETs will be appropriate for Alaska and the GOM.
Pg. 19731	The USEPA recently established new one-hour NAAQS for NO ₂ , and SO ₂ , as well as changes to the 8-hour O ₃ and annual PM _{2.5} NAAQS, and also given that the USEPA has recommended an interim SIL for one-hour NO ₂ at 8mg/ m ³ 30 and an interim SIL for one-hour SO ₂ at 3 parts per billion, ³¹ but has not proposed to add these SILs (or any SILs for PM _{2.5} or ozone) to 40 CFR 51.165(b)(2), comments are solicited on how these new ambient standards and SILs that have the status of only being USEPA recommendations should be implemented in the context of the new studies, for the purpose of updating the new EETs that result.	As discussed in more detail in Section 9.1, BOEM should adopt its own SILs once the scientific studies are complete. In Section 9.1, we propose that BOEM continue applying only the promulgated EPA regulatory SILs (40 CFR 51.165(b)(2)) until the Gulf of Mexico and Alaska regional air quality studies are completed. If those studies conclude that changes to the AQRP are warranted, the results of the studies may inform selection of appropriate SILs. There does not appear to be a particular standard or formula used by EPA to establish SILs, as they range from 1 to 5 percent of the NAAQS. BOEM has the option of identifying SILs based on a scientific rationale, or some percentage of the NAAQS it deems to be significant. Selection of SILs is another opportunity to involve the regulated community. If BOEM elects to continue use of EPA SILs, we recommend that BOEM adopt, in lieu of any EPA interim SILs, SILs set at no less than 5 percent of the applicable NAAQS. When EPA promulgates a SIL that is incorporated in the affected state's SIPs, then the new regulatory SIL would apply.
Pg. 19735	BOEM is soliciting information on the most appropriate method for establishing and reporting air quality requirements associated with decommissioning and structure removal activities in the context of the AQRP. This includes a request for information and comment on when and how BOEM should receive air quality emission data and information associated with decommissioning and structure removal and how an assessment of feasible ERM should be applied. One approach on which BOEM solicits comment would be whether it should provide for only the collection of emissions data associated with decommissioning activities for some period of time, followed by a second phase in which BOEM could utilize the data that was previously collected to craft an approach tailored to this unique type of activity.	We support BOEM's proposal to collect decommissioning emissions data for a period of time in order to craft an informed approach to address these unique activities. However, emissions from decommissioning should not be included in plan emissions inventories at the onset of an offshore project. It is impossible to predict or quantify emissions associated with decommissioning at the onset of a project. Production and development platforms may operate for 20-30 years, or longer, before decommissioning would occur, far beyond the ten year plan projection established in the proposed rule. During the operation of the platform, there may be various modifications and additions that may require revisions to plans. Consequently, predictions of decommissioning activities and emissions estimated during the initial planning stage will be obsolete when decommissioning actually occurs. Therefore, to require the collection of decommissioning emissions during initial plan preparation provides no useful information to BOEM.

Appendix C - Responses to BOEM's Specific Requests for Comment on Rule Provisions

81 Federal Register	BOEM Request for Comment	Response and Comment Reference
Pg. 19737	Air emissions of an MSC may often occur close to shore, and therefore would cause a greater impact onshore and/or at the SSB, than a similar amount of emissions from that same MSC which occur in the vicinity of the facility. BOEM is seeking comments on this proposed approach and will consider alternative methods that more accurately attribute emissions from mobile sources to the appropriate facility.	See Section 1.2.4 and chapters 3 and 8 for detailed discussion regarding MSC.
Pg. 19738	BOEM requests comments on the various types of modelling that could or should be used to more accurately reflect the origin and dispersion of emissions that are generated by mobile sources, such as MSCs, and under what circumstance volume source modelling would be appropriate or inappropriate.	As discussed in sections 1.2 and Chapter 3, OCSLA does not grant BOEM the authority to regulate MSC unless they are attached to the OCS facility and used for the transport of production. However, we have provided in Section 8.3, an assessment of the appropriateness of BOEM's proposed method of analysis.
Pg. 19739	BOEM welcomes comments and analysis on the potential impacts of emissions generated from OCS sources on the air quality over State submerged lands and/or the potential impact of such emissions on the environment above such lands, as well as any scientific, technical, or other information that can be provided to measure or evaluate the impact of OCS originated air pollutants on the area over State submerged lands.	See sections 1.2.5 and 8.6 for further discussion regarding point of compliance at the state seaward boundary and the availability of modelling tools and monitoring data. As discussed in sections 1.1 and 2.3, BOEM has not demonstrated that offshore activities significantly affect onshore air quality and prevent attainment or maintenance of NAAQS.
Pg. 19740	Because of this, the proposed regulations specify the effects of emissions, for modelling purposes, would be evaluated at those locations in the State(s) where the concentration of any given pollutant is expected to be the highest. Additionally, the effects of emissions would be evaluated in the non-attainment area where the concentration of any given pollutant is expected to be the highest among nonattainment areas for that pollutant (if different from the most affected area). This location might be on land or over State submerged lands. That location in the model would likely be the same for many, but not necessarily all, pollutants. Those air pollutants, such as O3, that are not directly emitted by a facility, but are instead created in the atmosphere, are often more heavily affected by climatological or meteorological conditions, which often cause them to concentrate at a location different than other air pollutants. Given technological advances, BOEM does not anticipate that adding additional hypothetical receptor locations to the modelling should present any technical difficulty but welcomes comments on how this requirement could be implemented most effectively.	As discussed in Section 8.9, in order to meet these requirements, all applicants will need to perform long-range transport modelling as such receptors are much further than 50 km from areas in the GOM or the Arctic Ocean. BOEM should limit the domain of the required modelling.
Pg. 19741	BOEM requests comments on the EET formulas and the underlying analysis used in this rulemaking or whether absolute values may be more appropriate.	As documented in Section 6.3, mass or absolute values thresholds conflict with the authority granted by OCSLA because there is no direct connection to onshore impacts. At the very least, distance from shore must be considered when establishing EETs.
Pg. 19742	As currently defined, the AQCR boundaries do not extend to include the OCS and, for this reason, it may sometimes be difficult to determine which AQCR would be most applicable. BOEM also recognizes that some AQCRs are very large, so it may not be certain that offsets in one part of the AQCR have a benefit to the area affected by offshore emissions. BOEM requests comments on how to best to define the relevant AQCR(s) and on whether there may be more appropriate alternative to defining the offset-generating areas or how to best refine the approach of applying AQCRs in this context.	In concept, the emissions credit provision provides benefit to the OCS operators. However, as discussed in Section 7.1, because BOEM has not established any specific emission credit regulatory requirements and states do not generally have banking systems for areas designated as attainment, the usefulness of the emissions credit program is significantly limited and would be burdensome, likely impossible, to implement solely on a case-by-case basis. In consultation with the regulated community and the adjacent states, BOEM must fully develop and propose an emissions credits system that addresses this issue and others.
Pg. 19743	In maintaining a "performance-based" approach to the proposed rule, BOEM is not proposing specific types of BACT, technical standards, or ERM. BOEM is seeking comment on whether it should identify various forms of ERM that have been approved in other situations, whether by BOEM, the USEPA or another regulator, and whether BOEM should provide additional specificity on how to determine the most appropriate	As discussed in Section 7.1, we conditionally support a presumptive ERM program. However, any finalized rule must allow an option for OCS operators to prepare an emission source-specific ERM analysis, taking into consideration technical, economic, and safety considerations specific to their facility.

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	<p>form of ERM and/or what cost effectiveness would be considered presumptively reasonable in making such a determination. All of these issues could be addressed in the context of establishing criteria for what may constitute “presumptive BACT” or presumptive ERM. BOEM invites comment on whether BOEM should adopt presumptive ERM and, if so, what processes it should use for adopting and updating the various forms of presumptive ERM that are suggested or approved.</p>	
Pg. 19744	<p>BOEM has examined the USEPA approach and intends to take these guidelines into consideration in developing its own guidelines for ERM, as well as for making a determination as to the viability and cost-effectiveness of alternative forms of ERM “taking into account energy, environmental, and economic impacts and other costs.” Because BOEM intends to publish its own ERM guidelines, it solicits comments on the USEPA’s approach and the underlying methodology for making the determination as to what forms of ERM may be most appropriate under various circumstances, as well as comments on why or under what circumstances the USEPA approach may or may not be appropriate to the OCS environment and how the ERM requirements could be best tailored to the unique conditions of the offshore oil and gas industry.</p>	<p>As discussed in Section 7.1, BOEM must fully define and develop an emissions reductions measures program and ensure that it is appropriate for OCS operations.</p>
Pg. 19745	<p>BOEM is proposing mandatory record keeping of fuel usage and activity data for all emissions sources, and we are proposing that non-exempt facilities subject to emissions reductions controls or mitigation and facilities that are exceptionally large be required to monitor their actual emissions..... BOEM welcomes comments on the potential application of PEMS and/or the best approaches for selecting and evaluating monitoring systems</p>	<p>As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.</p>
Pg. 19746	<p>BOEM solicits comments on various alternatives that could be used to achieve the Bureau’s objective of monitoring large emitters. BOEM lists four potential alternative methods of doing so.</p>	<p>As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.</p>
Pg. 19747	<p>OCSLA requires DOI to make a decision on whether to approve an EP within 30 days and a DPP within 60 days. Consequently, the air quality review process for the plan is limited in its ability to provide extensive analysis of complex plans. BOEM’s regulations require a similar review timeframe for DOCDs. While there is an opportunity for public comment on plans, there is limited opportunity for public review of air pollution measures in EPs, DPPs, or DOCDs. BOEM requests comments on how more opportunity for public input could be provided, while observing legal constraints on plan review timeframes.</p>	<p>We believe that the provided public comment periods provide sufficient opportunity for interested parties to comment. Furthermore, the OCS Program allows for extensive public engagement through the opportunity to provide comment during each major stage of energy development planning, including programmatic EIS, lease sale EIS, as well as Exploration and Development and Production Plans.</p> <p>In addition, the proposed rule requirements could jeopardize BOEM’s ability to effectively review, process and approve plans during the specified timelines (see Section 10.2 for detailed discussion).</p>
Pg. 19747	<p>BOEM is also proposing that lessees and operators resubmit their plans approximately every ten years to confirm compliance with all applicable requirements in effect on the date of resubmission. BOEM requests comments on this provision, particularly with respect to the potential impact on lessees and operators</p>	<p>As discussed in 1.3.2, the requirement to resubmit and obtain re-approval of previously approved plans is problematic and presents potential breach of contract and takings issues. As discussed in sections 10.1 and 10.3, we believe the current program is protective of onshore air quality. Contributions from existing facilities are accounted for in background concentrations when new facilities conduct air quality modelling to demonstrate compliance with the NAAQS. Consequently, BOEM should not require plan resubmittals. Furthermore, as detailed in ICR Comments submitted by OOC</p>

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		and API, the costs and burden associated with plan submittals and resubmittals could be significant.
Pg. 19748	BOEM is soliciting comments on alternative ways for how it might effectively ensure that the increments are not “consumed” in the relevant attainment areas or what steps it might take to protect the increments in an operational context without creating an undue burden on lessees or operators. Several alternatives are presented	As discussed in sections 1.2 and 2.2, applying USEPA’s PSD program, including comparison to the increments, to the OCS is inappropriate and beyond the scope of BOEM’s authority under OCSLA. However, sections 8.7 and 8.8 present comments on BOEM’s proposed process.
Pg. 19750	The new provision of this section is intended to apply to those situations where an organization is proposing to install a new facility on a RUE and that facility is not included in an exploration or development plan. In the event that an existing RUE was approved as part of an exploration or production plan, no new requirements would be imposed. Similarly, any application for a new RUE that is included within the scope of a proposed exploration or development plan would not be affected by the requirements of this paragraph. BOEM requests comments on the most appropriate method for establishing and reporting air quality requirements associated with the removal of any facility installed pursuant to a RUE in the context of the AQRP.	<p>As discussed in Section 12.6, emissions from RUE are not regulated under BOEM’s current AQRP and BOEM has not demonstrated that RUE activities significantly affect onshore air quality or threaten compliance with the NAAQS in onshore areas. Nor have RUE emissions (or any other OCS authorized activity emissions) been identified as significant sources in any affected state SIPs. Consequently, there is no compelling reason to regulate emissions from RUE activities.</p> <p>In regard to establishing and reporting air quality requirements associated with the removal of any facility, decommissioning or removal of a facility installed pursuant to a RUE would occur beyond the ten year plan projection established in the proposed rule. Predictions of removal activities and emissions estimated during the initial planning stage will be obsolete when decommissioning actually occurs. Therefore, to require the collection of decommissioning emissions during initial plan preparation provides no useful information to BOEM.</p>
Pg. 19750	Currently, the GOM Region prepares its emissions inventory by allowing lessees and operators to directly input data either on fuel use or on equipment usage and operating time. BOEM then uses this data to calculate the resulting emissions. This proposed rule would allow for the continuation of that practice in the GOM Region, and the expansion of that practice to other OCS regions. Accordingly, the proposed rule requires the submission of (1) facility and equipment usage, including hours of operation at each percent of capacity for each emissions source; and/or (2) fuel logs containing monthly and annual fuel consumption data showing the quantity, type, and sulphur content of fuel used for each emissions source. The proposed rule would require the information provided under this proposed section should be at a sufficient level of detail so as to facilitate BOEM’s compilation of a comprehensive OCS emissions inventory of air pollutants. BOEM solicits comments on various alternative methods for ensuring the accurate reporting of emissions and the appropriate methods that might be used to ensure the accuracy of the data and information it collects.	We support the continued use of GOADS and its expansion to all OCS regions under BOEM jurisdiction. However, as discussed in sections 2.6 and 11.6, the proposed monitoring and recordkeeping requirements in the proposed rule extend beyond what is currently required for GOADS reporting. We propose that BOEM require that operators monitor fuel and activity in accordance with their approved plan.
Pg. 19754	BOEM seeks comment on: (1) Whether this fifth [see above] alternative would be appropriate or is needed, particularly given that the emission factors used in USEPA’s marine and nonroad emission models apply regardless of flag (i.e., emissions from similar engines in similar use regardless of whether the engine is on a US or a foreign-flag vessel); (2) how such an approach would be applied to engines that use Heavy Fuel Oil, since the NOX Technical Code (NTC) allows engines to be certified on diesel fuel (which can have relatively high sulfur content); and, (3) what approach could be taken to estimate pollutants other than NOX (since there are no MARPOL standards for the majority of criteria and precursor pollutants) and, if using one of the other approaches is preferred, whether the NOX emission factors from those other approaches should be used and this fifth alternative be not adopted.	<p>BOEM assertion that “particularly given that the emission factors used in USEPA’s marine and nonroad emission models apply regardless of flag (i.e., emissions from similar engines in similar use regardless of whether the engine is on a US or a foreign-flag vessel);” is not accurate. The emission factors used in USEPA’s marine and nonroad emission models only apply to U.S. flagged vessels. Foreign flagged vessels comply with MARPOL when operating in the ECA.</p> <p>BOEM’s proposed regulations seem to conflate two distinct and separate issues: emissions of SO_x and emissions of NO_x. SO_x emissions are a product of fuel sulphur content and are not an engine certification matter. Emissions of NO_x, however, are an engine certification matter, and marine engines are tested with a reference fuel. The emission factors for engines are approved in accordance with test cycles defined in the NO_x Technical Code. The means of SO_x compliance for ships subject to MARPOL VI is stated on the IAPPC and are approved in accordance with IMO guidelines such as MEPC Resolution 259(68). NO_x emissions are the subject of the EIAPPC, which is then used to endorse the IAPPC.</p>

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		<p>Under the BOEM proposals, however, the fuel sulphur content used for engine testing would form part of the engine approval. This would represent a major deviation from the IMO NO_x Technical Code requirements, and would create difficulties in terms of demonstrating compliance. In addition, SO_x emissions should be decreasing already from oil and gas sources, particularly MSCs, in the OCS due to the use of ultra-low sulfur diesel fuel.</p> <p>BOEM has not demonstrated that the current method for determining emissions factors is ineffective. As discussed in Section 12.3, the proposed hierarchy will require a significant amount of work to evaluate the required method for determining the emissions factor for each pollutant and each emissions source, thereby exponentially increasing the amount of time required to prepare emissions inventories.</p>
Pg. 19755	<p>Given that equipment tends to operate less efficiently over time, the lessee or operator should make an appropriate upward adjustment in the emissions estimates for older equipment (e.g., to reflect emission deterioration over time). BOEM solicits comments and suggestions on how this might most appropriately be conducted and the extent to which there are appropriate, documented, methodologies for making these kinds of adjustments.</p>	<p>We have reviewed multiple state agency permitting programs and the EPA's permitting program for the Eastern Gulf of Mexico. We have not identified an analogue for the age-based adjustments that the BOEM has proposed in the NPRM.</p> <p>As explained in Appendix A, Section 550.205(b)(2)(vii), we are not aware of data that can reasonably be relied upon in making such age-based emission adjustments. We offer the following comments:</p> <ul style="list-style-type: none"> - It is not feasible to make appropriate upward adjustments in emission estimates for older equipment. Emissions of a completely overhauled engine may match that of a relatively new engine so an engine's age may not necessarily result in deterioration of an engine's emissions performance; - There is little to no actual emissions test data that supports BOEM's assertion that emissions increase on older equipment. The USEPA's compilation of emission factors for various emissions sources (AP-42) does not provide for age-based deterioration adjustments to emission factors. We request BOEM to remove language related to age-based adjustments to emission factors. - If BOEM requires an age-based adjustment of emission factors, we request BOEM to only require the use of deterioration factors when they have been developed by the manufacturer. For example, 40 CFR 1042.245 requires manufacturers to develop deterioration factors for certain categories of engines. Consistent with EPA's approach, the requirement to develop such factors should be placed on the engine manufacturers, not the engine purchaser. - For engines certified under Regulation 6 of MARPOL Annex VI, and Chapter 2 of the NO_x Technical Code (NTC), the NTC specifies that the engine maintenance shall conform to its provisions and as such, if the maintenance complies (regardless of the years of operation) with the original equipment manufacturer's maintenance requirements, then the certificate remains valid and any emissions derived from the NTC are also valid.
Pg. 19755	<p>The USEPA concept of PTE, which it defines at 40 CFR 51.301, is similar to the BOEM concept of facility emissions, in that both PTE and facility emissions refer to the maximum aggregate capacity of a stationary source to emit a pollutant under its physical and operational design. In both cases, this concept includes all emissions sources attached to a facility but excludes the attributed emissions of</p>	<p>In order to reduce confusion regarding differing definitions or uses of the same term by USEPA and BOEM, we support the use of "facility emissions" and "projected emissions" rather than "PTE".</p>

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	<p>unattached non-stationary sources.⁷³ For further details on the concept and use of PTE in the USEPA context, see “Potential to Emit: A Guide for Small Business,” USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-456/B-98-003, October 1998, available at: http://www3.epa.gov/airtoxics/1998sbapptebroc.pdf. BOEM is considering whether to use the term PTE instead of facility emissions, and BOEM invites comment on this question.</p>	
Pg. 19757	<p>Finally, just as BOEM is considering using the term PTE in place of the term facility emissions, BOEM is also considering using USEPA’s term secondary emissions (as defined in 40 CFR 51.301) in place of attributed emissions. BOEM welcomes comment on this question.</p>	<p>In order to reduce confusion regarding differing definitions or uses of the same term by USEPA and BOEM, we do not support the use of “PTE”. Furthermore, as discussed in sections 1.2.4 and 3, BOEM cannot regulate emissions from MSC, which are outside the scope of BOEM’s jurisdiction.</p>
Pg. 19758	<p>Consistent with current BOEM policy, any reference in these proposed regulations to major precursor air pollutants would exclude methane because the USEPA does not include methane in the definition of VOCs and does not require a methane analysis of ground level ozone formation for offshore facilities; both because methane has not historically been considered a significant precursor air pollutant with respect to distances and transport times relevant to BOEM regulation of offshore activities; and because the USEPA has not elected to formally classify methane as a precursor pollutant for O3. BOEM solicits comments on this proposed exclusion and on how BOEM should address the effects of methane emissions on secondary O3 formation and under what circumstances it would be appropriate, in the event it decides to do so.</p>	<p>Methane is not a pollutant regulated by the NAAQS and therefore should not be included in any BOEM rule.</p> <p>Furthermore, BOEM should consider the same ozone precursors that are considered by states in preparing State Implementation Plans for ozone in nonattainment areas, namely NO_x and VOC. EPA’s definition of VOC excludes both methane and ethane because they react very slowly in the atmosphere and therefore can only form ozone very slowly which allows time for emissions to be greatly diluted. Focusing on the same ozone precursors (NO_x and VOC) promotes consistency in analyses performed by BOEM and states and reduces burden on the regulated community to provide data.</p>
Pg. 19758	<p>The proposed rule would not immediately require analysis or reporting of O3. Rather, once the new emissions exemption studies have been completed, new EETs would likely be established to address O3 impacts to the State. Proposed paragraph 550.304(b) details the circumstances when O3 modelling would be required. Comments may be submitted as to how this would best be accomplished and at what point in time the implementation of these new standards would be most appropriate.</p>	<p>As discussed in Section 8.2, expensive and complex photochemical modelling is not warranted given the minimal impact of OCS operations on onshore air quality. As discussed in Section 2.4, we concur that implementation of any new EETs and modelling requirements should be postponed until the BOEM scientific studies have been concluded and BOEM approved photochemical models are available.</p> <p>In addition, any new EETs should be subject to the public review and comment process before adoption by BOEM.</p>
Pg. 19759	<p>(footnote) Currently, BOEM utilizes OMB-approved forms BOEM-0134 and BOEM-0135 for this purpose. The forms are being revised in connection with this rulemaking. BOEM also solicits comments on the proposed new forms, in terms of their usefulness, readability, complexity and completeness.</p>	<p>See Section 12.4 and ICR Comments submitted by OOC and API for detailed comments regarding BOEM’s draft forms. Due to the limited time available to comment, it was not feasible to provide more detailed comments on the AQR forms at this time.</p>
Pg. 19759	<p>The USEPA is currently working on an E-Enterprise solution for emissions data collection, whereby facilities (or companies) would report emissions data through a central place for distribution to USEPA, the States, and others. Since BOEM is proposing direct facility reporting as well, BOEM may elect to partner on this E-Enterprise solution for supporting BOEM’s needs alongside those of the USEPA. This approach may be more efficient both for the regulated entities as well as for USEPA and BOEM to use and share the data. BOEM welcomes comment on this alternative and whether there may be any impediments or complications should BOEM wish to move in this direction.</p>	<p>We support the continued use of the AQR forms, which will standardize the data submitted to the agency, which will reduce complexity and future costs and burden to the regulated community and to BOEM. However, as discussed in Section 12.4, BOEM must update the functionality of the AQR spreadsheets prior to publication of the final rule and allow for additional comment.</p> <p>However, should BOEM elect to partner on this E-Enterprise solution, reporting must be limited to those data required under BOEM’s regulation that are warranted to ensure compliance with NAAQS, and sufficient public input should be sought before any E-Enterprise solution is implemented.</p>

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Pg. 19761	While this proposal takes the approach described here for aircraft and onshore emissions, BOEM is considering whether it should instead establish a requirement whereby plans that propose aircraft and onshore emissions above a certain threshold, expressed as either a percent of the total plan emissions or an absolute amount of emissions, would have to include emissions from aircraft and onshore support facilities. BOEM would welcome comments on this approach, and also any data or analysis relevant to the issue of whether, and to what extent, aircraft and onshore emissions should be considered in evaluating a facility's emissions profile. Please provide comments on this approach and what threshold might be most appropriate.	As explained in Section 12.5 of the comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations. Onshore support emissions are sufficiently addressed by state and/or EPA regulatory programs.
Pg. 19761	The proposed rule would collect information on onshore support emissions if two specific criteria are both met: 1) if a plan which is already required to conduct modelling results in incremental increases in concentration of a pollutant that are greater than 95 percent of the value of a SIL (this is the same criteria that applies to the inclusion of aircraft); and 2) if the relevant onshore support facilities are not already permitted by the USEPA or a relevant State authority. BOEM solicits comments on this proposal, both with respect to whether gathering data on onshore support facilities is necessary and/or appropriate and what criteria should be used to determine the circumstances under which data about onshore support facility emissions should be collected. BOEM solicits comments on what types of onshore facilities should be identified and reported with respect to their air emissions and how best to evaluate their emissions in the context of the AQRP.	As explained in Section 12.5 of the comments, BOEM does not have authority to require inclusion of onshore support facilities or aircraft emissions in the air emissions evaluations. Onshore support emissions are sufficiently addressed by state and/or EPA regulatory programs.
Pg. 19769	BOEM recognizes that the USEPA classifies a short-term facility as being a facility that is located at the same location for no more than two years and solicits comments on the implications of retaining or potentially changing this longstanding practice.	We support the continued use of BOEM's classification that short-term facility means a facility that is located at the same location for no more than three years.
Pg. 19769	BOEM solicits comments on whether the technical feasibility should have to be demonstrated for the particular source identified in the plan or whether the feasibility could be demonstrated through use of similar but different sources.	See Section 7.1 for a detailed discussion regarding ERM and technical feasibility. We believe it would benefit the regulated community, and BOEM, if BOEM would establish and update an approved presumptive ERM data repository or clearinghouse. However, as discussed above, because technical and economic feasibility may vary significantly between OCS facilities, any finalized rule or guidance must allow an option for OCS operators to prepare an emission source-specific ERM analysis, taking into consideration technical, economic, and safety considerations specific to their facility.
Pg. 19770	At the present time, BOEM does not have EETs for Pb, PM2.5, or PM10, nor has it established EETs that would apply to anything other than the projected annual emissions. BOEM recognizes there may be a more appropriate distance-adjusted maximum emission exemption threshold for these pollutants and solicits comments from stakeholders on what they should be. Any comments should include an analysis of the reasoning used to support an alternative threshold, keeping in mind that the key goal is to ensure that offshore projected emissions of Pb, PM2.5, or PM10 do not "cause or contribute to a violation" of their corresponding NAAQS.	As discussed in sections 2.4 and 6.1, BOEM should not finalize emissions exemption threshold ranges prior to completing its scientific studies. Furthermore, as discussed in Section 6.3, EETs must account for distance to the onshore area of a State
Pg. 19772	As an alternative to the proposed distance-based formula, BOEM is also considering an option in which it would establish new minimum EETs based on the PSD emissions limits in the USEPA's regulations at 40 CFR 52.21(b)(23)(i). Those USEPA tables are intended primarily to determine whether a facility will generate potentially significant incremental increases in pollutant concentrations in the area surrounding the proposed emissions source. BOEM could either apply the current absolute numbers or utilize the values in the USEPA table and adjust them, on either a linear basis or on the basis of a Gaussian dispersion equation, in an appropriate manner based on the distance of the facility from the State BOEM solicits comments on this and other possible alternative approaches to establishing new maximum EETs (above which all plans would be subject to modelling) and minimum EETs (below which	As documented in Section 6.3, mass or absolute value thresholds conflict with the authority granted by OCSLA because there is no connection to onshore impacts. Furthermore, BOEM should delay this decision until the scientific bases for EETs have been established. Also, as discussed in Section 6.6, the proposed minimum EETs in Table 1 are in error.

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	BOEM would not establish any new EETs). Such a discussion would ideally include information both on the levels of the two sets of formulas, as well as on the type and nature of the formulas that should be applied	
Pg. 19773	In order to determine common ownership, BOEM will rely on the criteria defined by the Office of Natural Resources Revenue (ONRR) for evaluating whether or not two companies should be considered affiliates, as defined in the regulations at 30 CFR 1206.101 and 30 CFR 1206.151. BOEM solicits comments from lessees and operators with respect to how it could most effectively limit the application of these consolidation criteria to relevant parties and avoid the consolidation of emissions associated with facilities that are operated by unaffiliated companies.	Please see sections 1.4 for discussion of consolidation of multiple facilities.
Pg. 19777	There are some circumstances where the USEPA has not established a SIL for a given CP or in which it has established only an interim SIL that it or the relevant State air quality regulatory authority may also use in evaluating the impacts of a proposed facility. In some circumstances, the USEPA may have established one or more SILs in its regulations and an additional interim SIL(s), typically for some other averaging time(s), outside of its regulations. In other cases, the USEPA may have repealed a SIL without establishing a new one. Thus, there may be situations where a lessee or operator may propose a plan that exceeds the relevant EETs, then perform modelling only to find there may not be a relevant SIL to compare against its incremental emissions or a situation where it may be unclear which SIL(s) to use. In similar situations where the USEPA or the State would issue an air quality permit, the USEPA or the relevant State permitting authority has issued permitting guidance to supplement its regulations. The proposed rule does not contain a provision on this topic and BOEM solicits comments on how best to address this issue. BOEM also requests comment on what BOEM should do about NAAQS that do not have corresponding SILs in the USEPA regulations; comments on the following two alternative approaches are particularly welcome. One alternative would be for BOEM to require in the final rule that, for any NAAQS (pollutant and averaging period) for which there is no SIL in 40 CFR 51.165(b)(2), lessee and operators must apply the appropriate SIL being used by the most affected State (at the point where the incremental emissions caused by the facility would be highest). Another alternative would be for BOEM to establish its own interim SILs based on the USEPA's interim SILs, to be used unless and until the USEPA finalizes appropriate SILs in its regulation at 40 CFR 51.165(b).	<p>As discussed in more detail in Section 9.1, BOEM should adopt its own SILs once the scientific studies are complete. In Section 9.1, we propose that BOEM continue applying only the promulgated EPA regulatory SILs (40 CFR 51.165(b)(2)) until the Gulf of Mexico and Alaska regional air quality studies are completed. If those studies conclude that changes to the AQRP are warranted, the results of the studies may inform selection of appropriate SILs. There does not appear to be a particular standard or formula used by EPA to establish SILs, as they range from 1 to 5 percent of the NAAQS. BOEM has the option of identifying SILs based on a scientific rationale, or some percentage of the NAAQS it deems to be significant. Selection of SILs is another opportunity to involve the regulated community.</p> <p>If BOEM elects to continue use of EPA SILs, we recommend that BOEM adopt, in lieu of any EPA interim SILs, SILs set at no less than 5 percent of the applicable NAAQS. When EPA promulgates a SIL that is incorporated in the affected state's SIPs, then the new regulatory SIL would apply.</p> <p>Finally, as discussed in Section 2.3.1, all the SIPs developed by the states bordering the Gulf of Mexico and Alaska, show OCS-based contributions to onshore pollutant concentrations as small. In all cases, the SIPs indicate that the states responsible for achieving NAAQS compliance do not consider OCS sources to be significant contributors.</p>
Pg. 19777	In contrast to the other criteria air pollutants, the USEPA's current regulations do not set a SIL or AAI for O3. Rather than determine equivalent standards for O3 at the present time, BOEM is proposing to require ERM based on emissions precursors of O3 when modelling would indicate the NAAQS for O3 would be exceeded. Accordingly, lessees and operators would be required to add the results of their photochemical modelling, if required under section 550.304, to the existing background concentrations and determine if a NAAQS for O3 would be exceeded for any averaging time. If any NAAQS is exceeded, the lessee or operator would be required to apply ERM. BOEM solicits comments both on this approach and whether photochemical modelling should be required in all cases. Alternatives could include reserving a full scale analysis until such time as the USEPA has established a SIL for O3, applying a consultative process between applicant and BOEM consistent with current appendix W until such time as revisions to appendix W have been finalized and the USEPA has established or recommended significance levels.	As discussed in sections 1.1 and 2.3, BOEM has not provided any study or evidence to demonstrate offshore emissions significantly affect ozone concentrations onshore or within the state seaward boundary. Emission reduction measures for VOCs should not be required unless BOEM's ongoing studies conclude there is a significant onshore impact. Finally, there is no current justification for requiring facilities to perform complex photochemical modelling to address ozone compliance with the NAAQS. Any rulemaking is premature until BOEM's studies are complete.

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Pg. 19779	As is the case with current BOEM regulations, the requirements of this section differ depending on whether the potential impacts of any proposed facility would affect only attainment areas or whether non-attainment areas might also be affected. More stringent air quality requirements, of course, apply to situations where an area already exceeds a relevant pollution standard than in an area that is below that standard (i.e., has better overall air quality). BOEM has not proposed a definition of what “affect” means in this context but solicits comments on how this determination should be best made.	Please see Section 9 for a detailed discussion of our proposed definition of “affect the air quality of any State”
Pg. 19779	As discussed earlier, the current regulations use the MACIs in place of the AAs for determining whether longterm facilities have sufficiently reduced their impacts on attainment areas. The MACIs were based on the AAs at the time the current rule was promulgated. While BOEM is now proposing to cross-reference the AAs, it is also considering whether other standards would be better. Particularly, BOEM is considering whether it would be better to use standards that are based on a percentage of the level of the NAAQS, rather than the AAs. BOEM would appreciate comment on this issue and on what standards to set. BOEM also requests comments on the most appropriate method for defining the size and extent of the relevant “baseline areas” for the purpose of conducting the AQRP analysis.	As discussed in sections 1.2 and 2.2 applying USEPA’s PSD program, including comparison to the increments, to the OCS is inappropriate and beyond the scope of BOEM’s authority under OCSLA. Please see Section 9 for a detailed discussion of our proposed definition of “ <i>Affect the air quality of any State</i> ”
Pg. 19782	In the event that a lessee or operator elected to reduce the pollutant emissions of an onshore facility to offset corresponding emissions for a new facility proposed on the OCS, that lessee or operator would be required to notify the relevant State air quality regulatory body and arrange for the modification of the permit for the underlying onshore facility to reflect the proposed reduction in emissions. The State could then update the permitted level of emissions which would ensure compliance with the reduced emissions requirements on an ongoing basis. The State may also need to update its SIP, as appropriate, and modify its reporting to the USEPA. Lessees have not typically utilized emissions credits as a pollution mitigation measure in the past. BOEM solicits comments on the practicality and potential costs associated with the implementation of these proposals at the State level, as well as comments on how these proposals could most effectively be implemented in coordination with the States.	<p>As discussed in Section 7.6, Section 550.309(e)(6) requires operators to notify states of a need to revise their State Implementation Plans (SIP) when operators acquire emission reduction credits from onshore sources. We are not aware of any SIPs in the Gulf States or Alaska that include emission controls from OCS sources as part of attainment demonstrations. Furthermore, we are not aware of requirements for onshore facilities to notify states when reducing emissions at a facility in order for the state to update its SIP. States and federal agencies will be notified of emissions reductions at onshore facilities through typical permitting processes; therefore, there is no need to provide this additional information to states. This creates a situation which is unnecessarily duplicative and redundant. As discussed above, BOEM must fully develop its emissions credits scheme prior to finalizing the rule, which would include a mechanism for states to access the emissions credits banking database.</p> <p>Furthermore, the requirement is vague. If BOEM elects not to remove this requirement, BOEM must clarify and specify what information and data the designated operator would be required to submit, and to whom.</p>
Pg. 19782	Under the proposed rule, if a lessee or operator is operating under an approved plan, it would be required to resubmit a plan for a periodic air quality review no more frequently than ten years after BOEM’s previous approval of the plan. This provision would be added in furtherance of the objective of section 5(a)(8) of OCSLA, which requires BOEM to ensure compliance with the NAAQS, and which makes no exceptions with respect to previously approved plans. All of the applicable requirements of this subpart in effect on the date of resubmission would apply on the same basis to a resubmitted plan as for an initial plan. BOEM requests comments on this provision, particularly with respect to the potential impact on lessees and operators.	<p>As discussed in Section 1.3 and Chapter 10, we believe the current program is protective of onshore air quality. BOEM has not demonstrated that offshore activities significantly affect onshore air quality and prevent attainment or maintenance of NAAQS. Contributions from existing facilities are accounted for in background concentrations when new facilities conduct air quality modelling to demonstrate compliance with the NAAQS. Consequently, BOEM should not require plan resubmittals. Furthermore, as detailed in ICR Comments submitted by OOC and API, the costs and burden associated with plan submittals and resubmittals could be significant.</p> <p>As discussed in Section 1.3.2, the requirement to resubmit and obtain re-approval of previously approved plans is problematic and presents potential breach of contract and takings issues.</p>

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Pg. 19784	BOEM solicits comments as to how it should best implement the requirements of this section with respect to those facilities that would be required to report their actual emissions. BOEM invites comments on this issue with respect to how best to achieve the objective of obtaining actual data on potentially large pollution emitters while not adversely impacting those small-volume emitters whose emissions do not have any realistic potential to adversely affect the air quality of any State.	As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.
Pg. 19784	While the current regulation requires monitoring and reporting of emissions, it does not specify what monitoring is required. The proposed rule at section 550.311 would provide more specificity on how the monitoring and reporting must be carried out. BOEM believes a more comprehensive approach to emissions measurement and monitoring could improve the quality and type of information for estimating impacts on affected States. BOEM requests comments and suggestions with respect to the best approach to post-approval record-keeping, monitoring and reporting, including potential alternative approaches.	As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.
Pg. 19784	BOEM seeks comment on whether it should require or recommend that the stack testing data be collected with the USEPA's electronic reporting tool and submitted via CDX (Compliance and Emissions Data Reporting Interface-), so that the USEPA can update the AP 42/WebFIRE emissions factors and so BOEM can compile the relevant data and supply it to other lessees and operators for their use in the future.	BOEM should recognize that submitting stack testing data to USEPA's electronic reporting tool and submitted via CDX adds additional costs to stack testing. Therefore, BOEM must propose and allow the regulated community to comment on how they intend to use the information in WebFIRE prior to requiring it. We recognize that it could be beneficial to compile all of the test data for each make / model of engine and establish emission factors that an operator could use in a plan in lieu of stack testing. In such a case, BOEM could use an identifier in ERT or WebFIRE that could make it easier to identify offshore source testing.
Pg. 19784	BOEM solicits comment on whether there are other ways of collecting information or monitoring to ensure ongoing compliance with approved plans. Additionally, BOEM requests comment on alternative approaches to ensure compliance with an approved plan. BOEM also requests specific comment on whether there are ways to minimize the data collection and reporting burden associated with fuel logs while also ensuring the ongoing compliance with an approved plan. For example, there may be circumstances under which some facilities and/or MSCs would generate such low levels of emissions that there would be no practical possibility that the operations of those facilities and/or MSCs, cumulatively or separately, could exceed any relevant EET(s). Under those circumstances, the requirement to maintain fuel logs and/or activity data records may not be necessary or could be modified. BOEM solicits comment on what those circumstances may be and how BOEM might craft an exception or modification to the record-keeping requirements for small facilities and/or MSCs, so as to minimize the cost burden on lessees and operators – consistent with BOEM's need to ensure the integrity of its air quality regulatory program.	As discussed in Chapters 1 and 11 and in ICR Comments submitted by OOC and API, BOEM has proposed extensive and costly emissions monitoring, recordkeeping and reporting requirements as part of the proposed OCS regulations. BOEM lacks the legal authority to impose a majority of these requirements on OCS lessees and operators, and to impose any requirement with respect to MSC. However, should BOEM retain these impermissible provisions in any final rule, the monitoring, recordkeeping, and reporting requirements should be significantly reduced to reflect the minimal impact OCS operations have on onshore air quality.
Pg. 19791-19792	Based on this initial analysis, BOEM expects the implementation of this proposed rule may have a significant economic impact on a substantial number of small entities under 5 U.S.C. 605(b). BOEM, however, is seeking comments on the IRIA to inform its analysis and conclusions regarding the degree to which this rule may have an economic impact on such entities. Although BOEM does not believe that the proposed rule would have a significant economic impact on a substantial number of small entities, BOEM is requesting comment on the costs and impacts of the proposed policies in this rule on small entities. We will consider all comments at the final rule stage. We specifically request comments on the	Appendix B and ICR Comments submitted by OOC and API provide a detailed discussion of the potential economic impact of the proposed rule.

Appendix C - Responses to BOEM's Specific Requests for Comment on Rule Provisions

81 Federal Register	BOEM Request for Comment	Response and Comment Reference
	compliance cost estimates as well as regulatory alternatives that would reduce the burden on small entities.	
Pg. 19796	E.O. 12866 (section 1(b)(2)), E.O. 12988 (section 3(b)(1)(B)), E.O. 13563 (section 1(a)), and the Presidential Memorandum of June 1, 1998, require every agency write its rules in plain language. This means that, wherever possible, each rule must: a) have a logical organization; b) use the active voice to address readers directly; c) use common, everyday words and clear language, rather than jargon; d) use short sections and sentences; and e) maximize the use of lists and tables. If you feel we have not met these requirements, send your comments to Peter.Meffert@boem.gov.	<p>The proposed rule is repetitive and in some cases contradictory. Therefore, its logical organization could be greatly improved. Our recommended comments address these organizational issues.</p> <p>New designations and jargon are introduced by the proposed rule. For example, MSC is a new term that is not typically recognized in the regulated community and is unique to the proposed rule. Likewise, the term ERM is a new term and unique to the proposed rule.</p> <p>In addition, other than the plan resubmittal schedule, tables are non-existent in the proposed rule.</p>



November 29, 2016

VIA Email (gomggeis@boem.gov)

Dr. Jill Lewandowski
Chief, Division of Environmental Assessment
Office of Environmental Programs
Bureau of Ocean Energy Management
45600 Woodland Road, VAM-OEP
Sterling, VA 20166

Re: Comments on Draft Programmatic Environmental Impact Statement for Geological & Geophysical Activities on Gulf of Mexico Outer Continental Shelf

Dear Dr. Lewandowski:

This letter provides the comments of the International Association of Geophysical Contractors (“IAGC”), the American Petroleum Institute (“API”), the National Ocean Industries Association (“NOIA”), and the Offshore Operators Committee (“OOC”) (collectively, the “Associations”) in response to the Bureau of Ocean Energy Management’s (“BOEM”) request for comments on the Draft Programmatic Environmental Impact Statement (“DPEIS”) to evaluate potential environmental effects of multiple geological and geophysical (“G&G”) activities on the Gulf of Mexico (“GOM”) Outer Continental Shelf (“OCS”). *See* 81 Fed. Reg. 67,380 (Sept. 30, 2016). We appreciate BOEM’s consideration of the comments set forth below.

I. THE ASSOCIATIONS

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting

environmental requirements, while economically developing and supplying energy resources for consumers.

NOIA is the only national trade association representing all segments of the offshore industry with an interest in the exploration and production of both traditional and renewable energy resources on the United States OCS. NOIA's membership comprises more than 325 companies engaged in a variety of business activities, including production, drilling, engineering, marine and air transport, offshore construction, equipment manufacture and supply, telecommunications, finance and insurance, and renewable energy.

OOC is an organization of 47 producing companies and 61 service providers to the industry who conduct essentially all of the OCS oil and gas exploration and production activities in the GOM. Founded in 1948, the OOC is a technical advocate for the oil and gas industry regarding the regulation of offshore exploration, development, and producing operations in the GOM.

By submitting this letter, the Associations do not intend to limit the ability of their individual member companies to submit separate comments or present their own views on the issues discussed herein.

II. OVERVIEW

The GOM OCS is a significant source of oil and gas for the Nation's energy supply. In 2014, the GOM OCS region was responsible for 16% of the total United States crude oil production and 5% of dry natural gas production.¹ Likewise, GOM OCS leases are an important source of federal revenues, generating substantial bonuses, rentals, and royalties paid to the United States. Since 2008, lessees have paid over \$11 billion in bonus bids for lease sales in the GOM OCS.² Total oil and gas royalty revenues from the GOM OCS amounted to almost \$5 billion in fiscal year 2015 alone.³ Moreover, BOEM has recently estimated the net economic

¹ See U.S. Energy Information Administration, *Gulf of Mexico Fact Sheet* (June 22, 2016), http://www.eia.gov/special/gulf_of_mexico/data.cfm (last visited Nov. 27, 2016).

² See BOEM, *Outer Continental Shelf Lease Sale Statistics, Gulf of Mexico Oil and Gas Lease Offerings* (Dec. 31, 2015), <http://www.boem.gov/Outer-Continental-Shelf-Lease-Sale-Statistics/> (last visited Nov. 27, 2016).

³ See DOI, Office of Natural Resources Revenue, Statistical Information, <http://statistics.onrr.gov/ReportTool.aspx> (Reported Revenues [Single Year Only], FY2015, Accounting Year, Federal Offshore, Offshore Gulf) (last visited Nov. 27, 2016).

value of future GOM leasing to be as high as \$197 billion.⁴ As described in detail below, G&G activities are crucial to the discovery, development, and valuation of OCS resources that lead to such production.

The Outer Continental Shelf Lands Act (“OCSLA”) calls for the “expeditious and orderly development” of the OCS “subject to environmental safeguards.” 43 U.S.C. § 1332(3). However, in many ways, the DPEIS undermines OCSLA’s mandate and is legally and technically flawed. In general, a fundamental flaw with the DPEIS is its establishment of an unrealistic scenario in which G&G activities are projected to result in supposed effects to marine mammals that BOEM admits are unrealistic overestimates of impact. The supposed adverse effects of this worst case hypothetical scenario are then addressed in the DPEIS with burdensome and unsupported mitigation measures. This approach is contrary to both the best available scientific information and applicable law.

For over 40 years, the federal government and academic scientists have studied the potential impacts of G&G activities on marine mammals, and have concluded that any such potential impacts are insignificant. Indeed, this conclusion has been publicly reaffirmed by BOEM (*see* Section III.B.3 *infra*) and the DPEIS fails to present any evidence to counter this well-supported and longstanding conclusion. The DPEIS’s suggestion that such impacts are “moderate” (as opposed to insignificant) is not supported by the best available science and is made possible only by application of overly conservative estimates that BOEM admits do not accurately reflect the actual anticipated impacts.

In addition, many of the mitigation measures recommended in certain alternatives presented in the DPEIS are economically and operationally infeasible, will impose serious burdens on industry, and are highly unlikely to result in benefits to protected species. The Associations can and will support mitigation measures that are grounded in the best available science and consistent with existing practices that are proven to be effective and operationally feasible. However, we cannot support mitigation measures with no basis in fact or science, which are intended to address presumed adverse effects that will not occur, and which will result in less exploration of the OCS, contrary to OCSLA.

We also wish to clarify at the outset the relevance of the settlement agreement and subsequent stipulation that were entered into by the parties in *NRDC et al. v. Jewell et al.*, No. 2:10-cv-01882 (E.D. La.) (“*NRDC v. Jewell*”). *See id.* at Dkt. 118-2 (“Settlement Agreement”); *id.* at Dkt. 127-2 (“Stipulation to Amend”). The Settlement Agreement and the Stipulation to Amend were expressly agreed to for the sole purpose of settling litigation. The mitigation measures currently implemented through the terms of those agreements are not representative of

⁴ *See* BOEM, *2017-2022 OCS Oil and Gas Leasing Proposed Final Program*, at Table 5-8 (BOEM, Nov. 2016), <https://www.boem.gov/2017-2022-OCS-Oil-and-Gas-Leasing-PFP> (last visited Nov. 27, 2016).

measures that have been traditionally employed in the GOM. Moreover, the parties to the Settlement Agreement and the Stipulation to Amend did not agree, and there has otherwise been no subsequent demonstration, that the mitigation measures imposed through those documents are feasible, appropriate, or supported by the best available science.⁵

Lastly, the economic analysis included in the DPEIS is inadequate, particularly regarding the assumptions made about activity levels in the face of overly restrictive mitigation measures. The analysis appears to completely ignore the potential of reduced future drilling and production resulting from the generation of less G&G data. In addition, although the DPEIS describes the potential economic impacts of the various alternatives, it provides no cost estimates for direct, indirect, and induced economic impacts over the 10-year time period covered by the DPEIS. Nor does it adequately account for the variability inherent in offshore oil and natural gas exploration and development. In short, BOEM has failed to provide an economic impact analysis that allows stakeholders to meaningfully assess the practicability or feasibility of the proposed alternatives.

Our detailed comments on the DPEIS are set forth in Section III below. As to the alternatives presented in the DPEIS, the Associations find Alternative A to be the most reasonable because it presents the option that is most consistent with the best available science, operational feasibility, and applicable law. We strongly object to Alternatives B-G, for the reasons stated below. We look forward to working with BOEM as it proceeds with this National Environmental Policy Act (“NEPA”) review and selects the preferred alternative for the final PEIS. Although we encourage BOEM to issue the final PEIS on a schedule that is compliant with court-ordered deadlines, it must do so in a manner that produces a final PEIS that does not contain the inadequacies described in the following comments.

III. COMMENTS

A. The DPEIS Must Address OCSLA’s Mandates and Take Account of the Environmental Benefits of the Proposed Action

Congress enacted OCSLA to promote and ensure the “expedited exploration and development of the [OCS] in order to achieve national economic and energy policy goals, assure

⁵ See *NRDC v. Jewel*, Dkt. 118-2, Section IX (“Intervenor-Defendants do not agree that all of the measures described in paragraph IX.A and IX.B are feasible or appropriate. Intervenor-Defendants shall be free to challenge any such measures should one or more of the Federal Defendants develop and implement them.”); *id.* at Dkt. 127-2, Section G (“The terms of this Stipulation have been agreed to for purposes of compromise. No party concedes by entering into this Stipulation that any of the permit requirements described above are warranted by scientific evidence or should be imposed after the Stay expires, or that these requirements are sufficient to achieve legal compliance or reduce biological risk over the long term.”).

national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade.” 43 U.S.C. § 1802(1); *see also id.* § 1332(3) (the OCS “should be made available for expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs”). Indeed, Congress expressly intended to “make [OCS] resources available to meet the Nation’s energy needs as rapidly as possible.” *Id.* § 1802(2)(A); *see California v. Watt*, 668 F.2d 1290, 1316 (D.C. Cir. 1981) (OCSLA’s primary purpose is “the expeditious development of OCS resources”). “The first stated purpose of OCSLA, then, is to establish procedures to expedite exploration and development of the OCS. The remaining purposes primarily concern measures to eliminate or minimize the risks attendant to that exploration and development. Several of the purposes, in fact, candidly recognize that some degree of adverse impact is inevitable.” *Watt*, 668 F.2d at 1316. Here, the G&G activities evaluated in the DPEIS are authorized by BOEM pursuant to OCSLA. *See* 43 U.S.C. § 1340. Accordingly, OCSLA provides the substantive statutory mandates governing the alternatives addressed in the DPEIS.⁶

Seismic surveying has been and continues to be essential to achieving OCSLA’s goals because it is the only feasible technology available to accurately image the subsurface before a single well is drilled. Industry has made significant improvements in acquisition efficiency in recent years. Using standard hardware (airguns), we now acquire more and better quality data due to advancements in vessels, configurations, acquisition planning and execution, and data processing. Additional advancements in geophysical technology—including seismic reflection and refraction, gravity, magnetics, and electromagnetics—afford industry significant precision in subsurface imaging and will continue to provide more realistic estimates of potential resources. By utilizing these tools and applying increasingly accurate and effective interpretation practices, industry can better locate and dissect prospective areas for exploration.

Furthermore, modern seismic imaging reduces risk by increasing the likelihood that exploratory wells will successfully tap hydrocarbons and by decreasing the number of wells that need to be drilled in a given area, thereby reducing associated safety and environmental risks and the overall environmental footprint for exploration. For example, subsurface imaging can predict

⁶ *See Nat. Res. Def. Council, Inc. v. Pena*, 972 F. Supp. 9, 18 (D.D.C. 1997) (alternatives evaluated in an EIS are “heavily influenced by the agency’s consideration of the views of Congress, expressed, to the extent the agency can determine them, in the agency’s statutory authorization act, as well as in other congressional directives” (quotation omitted)); *see also City of Alexandria, Va. v. Slater*, 198 F.3d 862, 867 (D.C. Cir. 1999) (“the goals of an action delimit the universe of the action’s reasonable alternatives” (quotation omitted)); *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1121 (9th Cir. 2002) (Forest Service is “not required under NEPA to consider alternatives . . . that were inconsistent with its basic policy objectives”); *Westlands Water Dist. v. U.S. Dep’t of the Interior*, 376 F.3d 853, 866 (9th Cir. 2004) (“Where an action is taken pursuant to a specific statute, the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS.”).

potentially hazardous over-pressurized zones in a reservoir and thus allow an operator to better design a well to reduce its associated types and levels of risk. As technology continues to advance, the geophysical industry can continue to reduce drilling risk and increase potential production. Just as physicians today may use MRI technology to image an area that previously had been imaged by X-ray technology, geophysical experts are actively using and enhancing the most modern technology to make improved evaluations. Moreover, because survey activities are temporary and transitory, seismic surveying is the least intrusive and most cost-effective means to determine the likely locations of recoverable oil and gas resources in the GOM.⁷

G&G activities are therefore essential to both the “expeditious and orderly development” of OCS resources and the implementation of “environmental safeguards.” 43 U.S.C. § 1802(2)(A). However, the DPEIS provides no meaningful discussion of OCSLA’s mandates and specifically fails to show how each of the proposed alternatives is consistent with those mandates. Indeed, as demonstrated below, some of the alternatives undermine OCSLA’s mandates by imposing measures that will render important current and future exploration and development activities economically or operationally infeasible. In addition, the DPEIS does not meaningfully address the environmental benefits of G&G activities and, accordingly, fails to “adequately set[] forth sufficient information to allow the decisionmaker to consider alternatives and make a reasoned decision after balancing the risks of harm to the environment against the benefits of the proposed action.”⁸ In sum, well-established NEPA law requires BOEM to fully consider the statutory authority for the proposed action as well as all of the environmental benefits of the proposed action.

B. The DPEIS’s Marine Mammal Effects Analysis for Seismic Activities Is Seriously Flawed and Unsupported

The DPEIS concludes—for each alternative—that the effects of sound from project-related seismic surveys on marine mammals are “expected to be moderate, as potential exposures of marine mammals are expected to be extensive (potentially affecting large numbers of

⁷ Seismic air sources remain the most effective, commercially available technology to obtain necessary, accurate sub-surface data. While alternative technologies, including marine vibroseis, continue to be explored, such technology is not yet commercialized and has not yet been shown to provide comparable seismic data quality. The substantial cost to modify vessels and to use vibroseis requires a significant market to make the technology commercially viable. Moreover, the hypothetical environmental benefits of alternative technologies have not been demonstrated.

⁸ *Friends of the Boundary Waters Wilderness v. Dombeck*, 164 F.3d 1115, 1128 (8th Cir. 1999) (emphasis added); see also *Coal. for a Livable Westside v. U.S. Postal Serv.*, No. 99-cv-10873, 2000 WL 1264256, at *3 (S.D.N.Y. Sept. 7, 2000) (EIS must assess “the environmental benefits and detriments of the proposed action”).

individuals within areas of the AOI)...” DPEIS at 4-60. The Associations strongly disagree with this conclusion because it has no support in fact, science, or law. Specifically, as set forth below, this conclusion is erroneous because it (i) is derived from an unlawful “worst case analysis” that BOEM admits is not realistic; (ii) ignores the effects of mitigation measures; (iii) relies on biased and flawed technical assumptions and modeling; and (iv) does not consider all of the best available information, including a wealth of data demonstrating that seismic activities have had no detectable adverse impacts on marine mammal populations.

1. The DPEIS Unlawfully Relies on a “Worst Case” Analysis

Prior to 1986, NEPA regulations required a lead agency to prepare a “worst case analysis” of impacts for which there is incomplete or unavailable information. *See* 51 Fed. Reg. 15,618 (Apr. 25, 1986). However, this requirement was expressly rescinded decades ago because it was found to be “an unproductive and ineffective method of achieving [NEPA’s] goals; one which can breed endless hypothesis and speculation.” *Id.*; *see Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 354-56 (1989) (U.S. Supreme Court confirming that worst case analysis is no longer applicable).

In place of the worst case analysis requirement, the federal Council on Environmental Quality (“CEQ”) promulgated “a wiser and more manageable approach to the evaluation of reasonably foreseeable significant adverse impacts in the face of incomplete or unavailable information in an EIS.” 51 Fed. Reg. at 15,620. The new (and current) approach requires federal lead agencies to disclose such impacts and perform a “carefully conducted” evaluation based upon “credible scientific evidence.” *Id.*; *see* 40 C.F.R. § 1502.22(b)(1). In developing this requirement, CEQ explained that “credible” means “capable of being believed” and stated that “[i]nformation which is unworthy of belief should not be included in an EIS.” 51 Fed. Reg. at 15,622-23 (emphasis added).

However, by BOEM’s admission, the DPEIS presents an unrealistic worst case assessment of the potential effects of seismic activities on marine mammals that is purposefully constructed to overestimate levels of projected adverse effects. Specifically, the effects analysis is based solely on modeling (Appendix D) that “creates an estimate of the potential number of animals exposed to the sounds.” DPEIS at 1-16. BOEM explains:

This estimate alone does not reflect BOEM’s determination of the actual expected physical or behavioral impacts to marine mammals but rather an overly conservative upper limit because none of the mitigations examined in this Programmatic EIS were modeled. Biological significance to marine mammals is left to interpretation by the subject-matter experts.

Id. (emphasis added). “Biological significance” is not further evaluated or considered in the DPEIS even though, as addressed below, relevant information is available. This is a particularly arbitrary error because it results in a DPEIS that does not evaluate the actual effects that are

anticipated to be “caused by the action” or that are “reasonably foreseeable.” 40 C.F.R. § 1508.8 (definitions for “direct” and “indirect” effects).

Additionally, the exposure estimates themselves “are based on acoustic and impact models that are, by their nature, conservative and complex.” DPEIS at 1-19. Indeed, “[e]ach of the inputs into the models is purposely developed to be conservative, and this conservativeness accumulates throughout the analysis.” *Id.* (emphasis added). As a result, the exposure estimates are “higher than BOEM expects would actually occur in a real world environment.” *Id.*; *id.* at 1-20 (“This estimate does not reflect an actual expectation that marine mammals will be injured or disturbed. It is an overly conservative estimate.”). BOEM further admits that using the exposure models as a basis for the effects analysis “requires accepting a worst-case scenario, which ultimately overestimates the numbers of ‘take’ under the [Marine Mammal Protection Act (“MMPA”)] by equating those numbers with the exposures identified in the modeling rather than real world conditions.” *Id.* (emphasis added).

The Associations appreciate BOEM’s candor in providing accurate descriptions of the substantial shortcomings of the exposure modeling. However, such candor does not excuse BOEM from performing a lawful evaluation of the actually anticipated direct and indirect effects of the proposed action. As stated above, both direct and indirect effects must be “caused by” the action, and indirect effects must be “reasonably foreseeable.” 40 C.F.R. § 1508.8. By BOEM’s admission, the exposure estimates presented in the DPEIS do not accurately represent effects that BOEM expects to be “caused by” the proposed action or that are “reasonably foreseeable.” Aside from being contrary to NEPA requirements, BOEM’s inappropriate reliance on a worst case scenario to estimate marine mammal impacts could present challenges for the National Marine Fisheries Service (“NMFS”) should NMFS decide to rely on a similarly flawed analysis when issuing incidental take regulations under the MMPA.

Moreover, by performing an effects analysis that is “purposely developed to be conservative,” based on the highest sound levels and erroneously high marine mammal densities, and purposely intended to overestimate adverse effects, BOEM has performed precisely the type of “worst case analysis” that was rejected by both CEQ and the U.S. Supreme Court many years ago. By its terms, and as expressly stated in the DPEIS, the analysis of marine mammal impacts is intentionally designed to be inaccurate and to evaluate the worst possible consequences that could hypothetically result from unmitigated seismic surveying. It is hard to imagine an analysis that presents a scenario worse than the thousands to millions of incidental exposures that are predicted by the DPEIS.

In sum, the DPEIS’s analysis of marine mammal effects is plainly not credible; it evaluates effects that, by BOEM’s admission, will not occur, and, therefore, it is “unworthy of belief.” 40 C.F.R. § 1502.22(b)(1); 51 Fed. Reg. at 15,622-23. The DPEIS violates NEPA because it relies exclusively on a “worst case” analysis of seismic impacts on marine mammals, contrary to well-established law.

2. The DPEIS's Marine Mammal Effects Analysis for Seismic Activities Lacks Scientific Integrity and Relies on Inaccurate Assumptions

An EIS must rely upon “high quality” information and “accurate scientific analysis.” 40 C.F.R. § 1500.1(b); *Conservation Nw. v. Rey*, 674 F. Supp. 2d 1232, 1249 (W.D. Wash. 2009); *Envtl. Def. v. U.S. Army Corps of Eng'rs*, 515 F. Supp. 2d 69, 78 (D.D.C. 2007) (“Accurate scientific analysis [is] essential to implementing NEPA.”). It also must have “professional integrity, including scientific integrity” and may not rely on “incorrect assumptions or data” or “highly speculative harms” that “distort[] the decisionmaking process.” See *Theodore Roosevelt Conservation P'ship v. Salazar*, 616 F.3d 497, 511 (D.C. Cir. 2010); 40 C.F.R. § 1502.24; 73 Fed. Reg. 61,292, 61,299 (Oct. 15, 2008) (CEQ regulations require “high quality” information and “scientific integrity”).⁹ To be sure, courts have invalidated EISs that did not meet these standards, that were based on “stale scientific evidence . . . and false assumptions,” or that failed to disclose the “potential weakness” of relied-upon modeling. See, e.g., *Seattle Audubon Soc'y v. Espy*, 998 F.2d 699, 704 (9th Cir. 1998); *Or. Nat. Res. Council Fund v. Goodman*, 505 F.3d 884, 897 (9th Cir. 2007). As set forth below, the DPEIS fails to meet these rigorous standards because it wrongly omits any consideration of mitigation measures and relies on flawed and biased modeling.

a. The effects analysis improperly ignores mitigation measures

NEPA requires an EIS to address “any adverse environmental effects which cannot be avoided,” which necessitates an analysis of available mitigation measures. 42 U.S.C. § 4332(C)(ii) (emphasis added); see *Robertson*, 490 U.S. at 351-52, 353. However, the DPEIS turns this statutory mandate on its head by evaluating speculative adverse effects that can be (and are already being) avoided through the implementation of mitigation measures. In fact, these mitigation measures are an integral part of the proposed actions evaluated in the DPEIS. See, e.g., DPEIS at 1-3, 1-4 (proposed action includes BOEM authorizations of G&G activities and NMFS incidental take authorizations, both of which must include mitigation measures). Nonetheless, the DPEIS expressly declines to evaluate the countervailing beneficial effects of the very mitigation measures that are integral to the proposed actions. See DPEIS at 1-16 (“The modeling is conservative because it did not apply any of the 19 different mitigations analyzed in [the DPEIS].”); *id.* at 1-19 (“The modeling effort in Appendix D does not, for example, take into account any mitigation measures incorporated into the alternatives because the effect of those measures cannot be quantified with statistical confidence at this time.”); *id.* at 4-14 (mitigation measures not considered as part of effects analysis).

⁹ See also *CBD v. BLM*, 937 F. Supp. 2d 1140, 1155 (N.D. Cal. 2013) (principle that reasonably foreseeable environmental effects may not include “highly speculative harms” is equally applicable to direct and indirect effects); *Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 964 (9th Cir. 2005); *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005).

BOEM's election to ignore the beneficial effects of mitigation measures is particularly arbitrary because BOEM knows—unconditionally—that the mitigation measures would substantially decrease any adverse effects postulated by the overly conservative exposure modeling. As addressed below, there are no demonstrated adverse effects on any marine mammal populations (in the GOM or the Arctic) resulting from mitigated seismic survey activities. In addition, Appendix D itself demonstrates the effectiveness of currently employed mitigation measures. Specifically, in Phase I of the exposure modeling described in Appendix D where various modeling methods, inputs, and assumptions are assessed, Sections 6.5.3 and 6.5.4 consider the effects of incorporating mitigation measures and aversive responses into the exposure modeling. Tables 40 and 44 show that the implementation of shutdowns may reduce the number of estimated Level A exposures by 10% to 80%.¹⁰ Similarly, the effect of modeling aversive responses by marine mammals also shows potentially large reductions in the percentages of animals exposed above Level A criteria (40% to 85% for the peak sound pressure level [“SPL”] criteria and 14% to 20% for the root-mean-square [“rms”] SPL).

Despite these demonstrations of significant and meaningful reductions in the number of estimated exposures as a result of mitigation measures and aversive responses, and the fact that both are likely to occur under all of the alternatives considered in the DPEIS, they are inexplicably not included in the final (Phase II) modeling used to estimate exposures for the impact assessments and ultimately not considered as part of the effects analysis. Although there are uncertainties associated with including these measures in the modeling process, those uncertainties are not substantially different than uncertainties associated with other inputs to the modeling process and they should not be disqualified from use for that reason.

BOEM's refusal to incorporate the known benefits of mitigation measures, many of which are standard best practices that the seismic industry already implements, is arbitrary, unsupported, and contrary to well-established NEPA principles.¹¹ An agency cannot simply ignore certain effects of an action because they “cannot be quantified with statistical confidence” (DPEIS at 1-19), particularly when it chooses not to ignore admittedly incorrect assumptions that inaccurately estimate impact levels. This is the very definition of “arbitrary and capricious” agency action. Rather, BOEM must evaluate all reasonably foreseeable effects that will be caused by the proposed action, including the offsetting effects of mitigation measures, perform a

¹⁰ The effectiveness of mitigation varies by species as it is related to the probability of detecting each species; however, those species that form large groups and/or are most abundant are the ones for which mitigation is most effective. Thus, the percent reduction in estimated exposures is likely greatest for the species with the highest absolute estimated exposures.

¹¹ These standard best practices are the mitigation measures that have been employed for many years in the GOM under Joint Notice to Lessees (“NTL”) No. 2016-G02 (previously NTL No. 2012-G02 and NTL No. 2007-G02) and are represented in Alternative A. In this comment letter, we refer to these measures as the “Standard Mitigation Measures.”

high quality and accurate assessment of those effects, and reach reasoned conclusions regarding the effects that are likely to occur.

b. The effects analysis is arbitrarily biased to unrealistic scenarios that are unsupported by actual data

The exposure modeling set forth in Appendix D makes many biased assumptions that substantially contribute to the inaccuracy of the DPEIS's effects analysis. Specifically, the modeling analysis in Appendix D contains multiple layers of precaution that aggregate in the annual and 10-year estimates. Attachment A to this letter provides a more detailed assessment of the overly conservative (*i.e.*, unrealistic) assumptions used in the modeling. These assumptions contribute anywhere from 10% to multiple orders of magnitude above the mean or most likely exposures outcome (*i.e.*, 100 to 1,000 times the "most likely" number of exposures). In aggregate, these compounding highly conservative assumptions produce a predicted number of exposures that is thousands to millions of times greater than the average or most likely outcome.

For example, the Phase II model assumes a source array of 8,000 cubic inches. This is at, or very near, the upper limit of the largest source arrays used in the GOM. *See* DPEIS at 3-18, Appx. D at D-25. The actual distribution of array sizes in the GOM ranges from 8,400 cubic inches to less than 2,000 cubic inches, with a mean value of 5,600 cubic inches. The scaling differences in the range to threshold criteria produced by an overestimated array size of 8,000 cubic inches cascade down through the calculations, so that when a threshold range four times larger than produced by a typical survey source is established using hearing injury thresholds 10 or a hundred times lower than actual measured thresholds, and applied to numbers of animals (using the Duke model) that are 10 times higher than any previous estimates, the outcome is a prediction that 10,000 to 100,000 times more exposures might occur than use of the "best available data" values might otherwise have calculated. *See Attachment A*. Instead of this overly precautionary and unrealistic approach, BOEM could have used the data for all array sizes used in the GOM in the past 10 or 20 years, plotted them on a typical bell-shaped curve, and calculated the mean or median and variance or mode.

Another example of excess precaution built into BOEM's effects analysis is found in the values entered into the transmission loss model. On pages D-100 through D-123 of Appendix D, the analysis acknowledges that (1) the "worst case" sound speed profile produces propagation at a given range that is 10 decibels ("dB") better than the average; (2) the actual-versus-modeled bathymetry and bottom properties probably add another 4 dB; and (3) using a smooth rather than wavy ocean surface might add another 1-2 dB over the actual transmission loss. In aggregate, an added 16 dB or so of "precautionary assumptions" translates to sound propagation that would travel more than 10 times farther than the result that would be produced by the "most likely" propagating environment (using a typical hybrid transmission loss value of $15\log(R)$). Again, this single example is combined with other examples of precaution to predict exposure numbers that are thousands to millions of times higher than the most likely outcomes.

Yet another example occurs where the effects of running the animat exposure models for only 24 hours and then scaling those results up to longer survey periods (*e.g.*, 30 days) are assessed in Section 6.5.1. Using this method, the total exposure estimates based on the rms SPL criteria are found to vastly “overestimate the number of animats exposed to levels exceeding threshold....” DPEIS, Appx. D at D-69. Nonetheless, this method is used in Phase II (App. D at D-180) to produce the final exposure estimates (App. D Section 7.3.4).

Section 6.5.2 analyzes potential contributions to uncertainty from the sound source characterization modeling, and from sound speed profiles, geoacoustic parameters, bathymetric data, and sea state inputs to the acoustic propagation modeling. This analysis concludes that the various uncertainties in the acoustic field represent a “multi-dimensional envelope” and that these different dimensions “cannot be summed to yield a ‘total’ uncertainty as this would be a meaningless quantity.” However, this conclusion is incorrect. There are ways to quantify the uncertainty in a meaningful way despite challenges to directly calculating the total uncertainty (or statistical variance). For example, the combined uncertainty contributed by environmental and model parameters could be further evaluated by comparing the outputs from multiple runs of the entire modeling process (both acoustic propagation modeling and exposure modeling) in which one or more of the parameters are adjusted across reasonable levels in each competing model run. The parameter-specific uncertainty analyses presented in Phase I of Appendix D are useful for identifying which parameters to adjust within the competing full modeling runs, but alone they only reinforce the fact that significant uncertainty is present at many steps within the modeling process. Multiple runs of the full modeling process using alternative parameter estimates should be conducted to improve the understanding of the total uncertainty surrounding the final results.

In addition, the analyses set forth in Section 6.5.2 of Appendix D use various methods to assess uncertainty around the parameters used in acoustic propagation modeling. However, in all examples only the “typical” (average or median) and “worst case” values are evaluated. As a result, uncertainties are only characterized in one direction from the typical or expected result, and that direction results in longer-range propagation of sounds. When characterizing uncertainty around estimates, it is common practice to not only report the upper confidence limits (“worst case” results in this example), but to also report the lower confidence limits. Without an understanding of the lower confidence limit values, it is not possible to properly bound and assess the range of outcomes from the modeling and interpret the likelihood of potential impacts. The failure to characterize the lower confidence limits results in a flawed and arbitrary analysis that is significantly biased. BOEM summarizes the significant biases of the modeling as follows:

The existing modeling largely does not account for uncertainty in the data inputs and also selects highly conservative data inputs. This bias often produces unrealistically high exposure numbers and “takes” that exponentially increase uncertainty throughout each step of the modeling. The modeling does not incorporate

mitigation or risk reduction measures designed to limit exposure. The modeling is an overestimate and should be viewed with that understanding.

DPEIS at 4-47 (emphases added).

An analysis that, by the agency's admission, purposely overestimates effects and relies upon incorrect and unrealistic assumptions, is, by definition, "inaccurate" and therefore contrary to applicable NEPA standards. *See* 40 C.F.R. § 1500.1(b) (requiring "accurate scientific analysis"). Moreover, the DPEIS's analysis of marine mammal impacts is, at best, "highly speculative" because it is based on scenarios and assumptions that, by BOEM's admission, are not accurate and will not occur. For these additional reasons, the analysis of the effects of seismic activities in the DPEIS is arbitrary and violates NEPA.

3. The Marine Mammal Effects Analysis Does Not Consider the Best Available Information

As addressed above, and in Attachment A, the analysis of potential effects of seismic activities on marine mammals is based on overly conservative, unrealistic, and biased modeling of "exposures." Aside from the flaws with this approach, there is a wealth of available information that actually informs the analysis of the reasonably foreseeable effects caused by seismic activities. These data are either minimized or not addressed at all in the DPEIS. BOEM must consider this available information to assess the biological significance of the exposure estimates. Without any assessment of biological significance, the exposure estimates are entirely uninformative and misleading.

First, BOEM goes to great lengths to assert, correctly, that exposures are not necessarily incidental takes. *See, e.g.*, DPEIS at 1-15. In the same paragraph, however, BOEM contradicts itself by stating, without support, that it expects that the "majority of exposures" are likely to result in takes. *Id.* at 1-15, 1-16. BOEM makes no effort to quantify or otherwise qualitatively address the significance of exposures. As a result, exposures become a de facto surrogate for "takes." *See* DPEIS, Appx. D at D-310-320.

Second, the history of formal assessments of offshore seismic activities demonstrates that levels of actual incidental take are far smaller than even the most balanced pre-operation estimates of incidental take.¹² Indeed, more than four decades of worldwide seismic surveying

¹² *See, e.g.*, BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Eastern Planning Area Lease Sales 225 and 226*, at 2-22 (2013), <http://www.boem.gov/BOEM-2013-200-v1/> ("Within the CPA, which is directly adjacent to the EPA, there is a long-standing and well developed OCS Program (more than 50 years); there are no data to suggest that activities from the preexisting OCS Program are significantly impacting marine mammal populations.");

(continued . . .)

and scientific research indicate that the risk of physical injury to marine life from seismic survey activities is extremely low. Currently, there is no scientific evidence demonstrating any biologically significant negative impacts to marine life from seismic surveying. As stated by BOEM:

To date, there has been no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic

(. . . continued)

BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Western Planning Area (WPA) Lease Sales 229, 233, 238, 246, and 248 and Central Planning Area (CPA) Lease Sales 227, 231, 235, 241, and 247*, at 4-203 (v.1) (2012), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v1.aspx (WPA); *id.* at 4-710 (v.2), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v2.aspx (CPA) (“Although there will always be some level of incomplete information on the effects from routine activities under a WPA proposed action on marine mammals, there is credible scientific information, applied using acceptable scientific methodologies, to support the conclusion that any realized impacts would be sublethal in nature and not in themselves rise to the level of reasonably foreseeable significant adverse (population-level) effects.”); BOEM, *Final Supplemental EIS for Gulf of Mexico OCS Oil and Gas WPA Lease Sales 233 and CPA Lease Sale 231*, at 4-30, 4-130 (2013), http://www.boem.gov/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2013/BOEM%202013-0118.pdf (reiterating conclusions noted above); MMS, *Final Programmatic EA, G&G Exploration on Gulf of Mexico OCS*, at III-9, II-14 (2004), http://www.nmfs.noaa.gov/pr/pdfs/permits/mms_pea2004.pdf (“There have been no documented instances of deaths, physical injuries, or auditory (physiological) effects on marine mammals from seismic surveys.”); *id.* at III-23 (“At this point, there is no evidence that adverse behavioral impacts at the local population level are occurring in the GOM.”); LGL Ltd., *Environmental Assessment of a Low-Energy Marine Geophysical Survey by the US Geological Survey in the Northwestern Gulf of Mexico*, at 30 (Apr.-May 2013), http://www.nmfs.noaa.gov/pr/pdfs/permits/usgs_gom_ea.pdf (“[T]here has been no specific documentation of TTS let alone permanent hearing damage, i.e., PTS, in free-ranging marine mammals exposed to sequences of airgun pulses during realistic field conditions.”); 75 Fed. Reg. 49,759, 49,795 (Aug. 13, 2010) (issuance of IHA for Chukchi Sea seismic activities (“[T]o date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to airgun pulses, even in the case of large airgun arrays.”)); MMS, *Draft Programmatic EIS for OCS Oil & Gas Leasing Program, 2007-2012*, at V-64 (Apr. 2007) (citing 2005 NRC Report), <http://www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Five-Year-Program/5and6-ConsultationPreparers-pdf.aspx> (MMS agreed with the National Academy of Sciences’ National Research Council that “there are no documented or known population-level effects due to sound,” and “there have been no known instances of injury, mortality, or population level effects on marine mammals from seismic exposure”).

activities adversely affecting marine animal populations or coastal communities. This technology has been used for more than 30 years around the world. It is still used in U.S. waters off of the Gulf of Mexico with no known detrimental impact to marine animal populations or to commercial fishing.

In <http://www.boem.gov/BOEM-Science-Note-August-2014/> (*Science Notes*, Aug. 22, 2014); *see also* <https://www.boem.gov/BOEM-Science-Note-March-2015/> (*Science Notes*, Mar. 9, 2015) (there has been “no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic activities adversely affecting animal populations”); DPEIS at 4-57 (“There are multiple factors that indicate that the potential for repeated exposures are unlikely to result in reduced fitness in individuals or populations ... G&G surveys have been ongoing in the northern GOM for many years, with no direct information indicating reduced fitness in individuals or populations.” (emphasis added)).¹³ Moreover, the BOEM Environmental Studies Program has spent more than \$50 million on protected species and sound-

¹³ There are well-documented examples of long-term exposures of acoustically sensitive species where no biologically significant chronic or cumulative impacts have occurred. For example, oil and gas seismic exploration activities have been regularly conducted in the Beaufort and Chukchi Seas of the Arctic Ocean for decades, with regular monitoring and reporting to NMFS under the auspices of MMPA incidental take authorizations issued since the early 1990s. During this lengthy period of acoustic exposures, and despite annual lethal takes by Alaska Natives engaged in subsistence activities, bowhead whales have consistently increased in abundance to the point that they are believed to have reached carrying capacity. *See, e.g.*, 84 Fed. Reg. 25,830, 25,837 (May 1, 2012) (“There is no specific evidence that exposure to pulses of air-gun sound can cause PTS [physical injury] in any marine mammal, even with large arrays of air-guns.”); *id.* at 25,838 (“To date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to air-gun pulses, even in the case of large air-gun arrays.”); *id.* at 25,839 (“Thus, the proposed activity is not expected to have any habitat-related effects on prey species that could cause significant or long-term consequences for individual marine mammals or their populations.”); 75 Fed. Reg. 49,760, 49,795 (Aug. 13, 2010) (“To date, there is no evidence that serious injury, death or stranding by marine mammals can occur from exposure to air-gun pulses, even in the case of large air-gun arrays.”); *see also* Reichmuth, C., Ghoul, A., Sills, J., Rouse, A. and B. Southall. 2016. Low-frequency temporary threshold shift not observed in spotted or ringed seals exposed to single air gun impulses, *J. Acoust. Soc. Am.*, 140: 2646-2658 (“There was no evidence that these single seismic exposures altered hearing – including in the highest exposure condition, which matched previous predictions of temporary threshold shift (TTS) onset The absence of observed TTS confirms that regulatory guidelines (based on M-weighting) for single impulse noise exposures are conservative for seals.”).

related research over more than four decades without finding evidence of adverse effects. See <http://www.boem.gov/BOEM-Science-Note-August-2014/> (*Science Notes*, Aug. 22, 2014) (“Since 1998, BOEM has partnered with academia and other experts to invest more than \$50 million on protected species and noise-related research.”). The geophysical and oil and gas industries, the National Science Foundation, the U.S. Navy, and others have spent a comparable amount of funds on researching potential impacts of seismic surveys on marine life and have found no evidence of significant effects. See http://www.scandoil.com/moxie_issue-bm2/bm.doc/sogm_1-2-16_sml-jip.pdf; www.soundandmarinelife.org. None of this is meaningfully discussed in the DPEIS.

Third, the DPEIS fails to evaluate the accumulated observational data collected by Protected Species Observers (“PSOs”) on survey vessels in the GOM as part of the DPEIS’s effects analysis. This information is relevant to the assessment of marine mammal effects by seismic vessels operating in the GOM. Not surprisingly, the PSO data indicate a negligible level of effects that undermines the results of the exposure modeling presented in Appendix D. For example, the DPEIS implausibly concludes that many thousands of marine mammals will experience incidental take as a result of seismic activities. These estimates would result in tens of thousands of shutdown events per year. However, based on actual monitoring data, as reported in relatively recent environmental assessments, an average of only 55 shutdowns per year occur in the GOM with operations conducted under the Standard Mitigation Measures. See also Barkaszi et al. (2012) (reporting a total of 144 shutdowns from 2002 to 2008, or 24 per year); Attachment B.¹⁴ The PSO data must be fully disclosed and evaluated in the DPEIS and the effects analysis must be substantially revised to account for the available PSO data. See *Gas Appliance Mfrs. Ass’n*, 998 F.2d 1041, 1045 (D.C. Cir. 1993) (“Since the accuracy of any computer model hinges on whether the underlying assumptions reflect reality . . . [t]he agency’s burden [to demonstrate the reasonableness of a model] becomes heavier when a method of prediction is being relied on to overcome adverse actual test data.” (quotations and alteration omitted)).

4. Conclusions—Marine Mammal Effects Analysis

As set forth above, the DPEIS’s analysis of the effects of seismic activities on marine mammals is unrealistic, flawed, incomplete, and unlawful. The effects analysis is almost exclusively based upon a modeling exercise that uses a cascading series of conservatively biased assumptions for all uncertain parameter inputs. These assumptions lead to accumulating bias as the cumulative conservative assumptions add up to increasingly unlikely statistical probabilities not representative of real-world conditions. Consequently, the results quickly become little more

¹⁴ A study of more than a decade’s worth of marine mammal observation data performed by the Joint Nature Conservation Committee (“JNCC”) demonstrates that mitigation measures significantly reduce the effects of seismic activities on marine mammals. The JNCC study’s results should be addressed in the DPEIS. See <http://jncc.defra.gov.uk/page-6985>.

than improbable precautionary worst case scenarios—not fair simulations or representations of likely environmental effects. The DPEIS relies upon this worst case scenario analysis to implausibly conclude that the potential effects of seismic surveying on marine mammals are “moderate”—*i.e.*, “detectable, short-term, extensive, and severe; or ... detectable, short-term or long-lasting, localized, and severe; or ... detectable, long-lasting, extensive or localized, but less than severe.” DPEIS at 4-8.

Aside from being scientifically and legally indefensible, BOEM’s conclusion is not supported by the best available information, which demonstrates that no “long-lasting” or “severe” impacts to marine mammal populations from seismic activities have occurred in the GOM. Indeed, BOEM’s conclusion is not even supported by its own statements. *See* DPEIS at 4-59 (“the best available information, while providing evidence for concern and a basis for continuing research, does not, at this time, provide grounds to conclude that [seismic] surveys would disrupt behavioral patterns with more than negligible population-level impacts” (emphases added)). To make matters worse, the unrealistic scenario presented in the DPEIS is evaluated in a vacuum, with no meaningful consideration of the effectiveness of the mitigation measures that are expressly included in the proposed action. Insofar as we are aware, no seismic activities in the United States OCS have caused impacts amounting to anything more than temporary changes in behavior, without any known injury, mortality, or other biologically significant consequence to any marine mammal species or stocks.¹⁵

In sum, the DPEIS’s finding that seismic activities will cause “moderate” impacts to marine mammals has no factual or scientific support, is contrary to the best available information, and violates NEPA.¹⁶ For the reasons set forth above, the Associations strongly object to this unsupported finding.¹⁷

¹⁵ Additional technical comments are provided in Attachment C to this letter.

¹⁶ The biased and overly conservative effects analysis is the very reason why application of various mitigation measures are supposedly “not sufficient to change the overall impact ratings” (*i.e.*, “moderate” for seismic effects on marine mammals). DPEIS at xxii. The effects analysis is so flawed that the results it produces are meaningless and non-specific, providing no basis for comparison among the alternatives. *See NRDC v. U.S. Forest Serv.*, 421 F.3d 797, 811 (9th Cir. 2005) (“Where the information in the initial EIS was so incomplete or misleading that the decisionmaker and the public could not make an informed comparison of the alternatives, revision of an EIS may be necessary to provide a reasonable, good faith, and objective presentation of the subjects required by NEPA.”).

¹⁷ The Associations’ position that there are currently no demonstrated adverse effects from seismic surveys on marine mammal populations does not preclude our taking a proactive and environmentally responsible approach by actively investigating legitimate concerns raised by subject matter authorities, and doing so in the best traditions of independent, peer-reviewed

(continued . . .)

C. Certain Mitigation Measures Are Infeasible, Unsupported, and Unnecessary

The record demonstrates that the Standard Mitigation Measures, as applied to offshore operations in the GOM, are already more than adequate to protect marine mammals, sea turtles, and fish species in a manner consistent with federal laws.¹⁸ Despite this record, the DPEIS recommends certain mitigation measures that have never been required for offshore exploratory operations in the United States, and that are more stringent (and less supported) than the measures that have already been successfully implemented. Many of the unprecedented measures recommended in the DPEIS are a direct result of BOEM's flawed impact assessments. As described above, the DPEIS creates a hypothetical worst case scenario for marine mammal impacts, determines that the projected adverse effects in that scenario will be substantial, and then recommends mitigation measures to address those supposed effects. However, because the adverse effects identified in the DPEIS are inaccurate and unrealistic, some of the mitigation measures intended to address those effects are similarly flawed and without support.

The unwarranted and arbitrary mitigation measures are addressed in detail below. Without question, these measures, if implemented, will have substantial adverse effects on offshore geophysical operations and substantial economic impacts. These measures will also result in increased survey duration, which, in turn, can increase the potential exposure of marine mammals to sound from seismic surveys and the potential for interference with other users of the

(. . . continued)

scientific study. See E&P Sound and Marine Life Joint Industry Programme ("JIP"), www.soundandmarinelife.org).

¹⁸ See *supra* note 12; see also Mary Jo Barkaszi et al., *Seismic Survey Mitigation Measures and Marine Mammal Observer Reports* (2012); A. Jochens et al., *Sperm Whale Seismic Study in the Gulf of Mexico: Synthesis Report*, at 12 (2008) ("There appeared to be no horizontal avoidance to controlled exposure of seismic airgun sounds by sperm whales in the main SWSS study area."); 78 Fed. Reg. 11,821, 11,827, 11,830 (Feb. 20, 2013) ("it is unlikely that the proposed project [a USGS seismic project] would result in any cases of temporary or permanent hearing impairment, or any significant non-auditory physical or physiological effects"; "The history of coexistence between seismic surveys and baleen whales suggests that brief exposures to sound pulses from any single seismic survey are unlikely to result in prolonged effects."); 79 Fed. Reg. 14,779, 14,789 (Mar. 17, 2014) ("There has been no specific documentation of temporary threshold shift let alone permanent hearing damage[] (i.e., permanent threshold shift, in free ranging marine mammals exposed to sequences of airgun pulses during realistic field conditions."); 79 Fed. Reg. 12,160, 12,166 (Mar. 4, 2014) ("To date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to air gun pulses, even in the case of large air gun arrays.").

GOM.¹⁹ We therefore strongly urge BOEM to adopt only the mitigation measures set forth in Alternative A.²⁰

1. Seasonal restriction for coastal waters

Alternatives C-F include a seasonal restriction for seismic surveys for all coastal waters, federal and state, shoreward of the 20 meter isobath from February 1 to May 31. However, this proposed restriction is unsupported for a number of reasons, as set forth below. For these reasons, we request that the seasonal restriction be eliminated from Alternatives C-F.

First, the Settlement Agreement restricts operation of airguns within federal coastal waters shoreward of the 20 meter isobath from March 1 to April 30, and the stipulation to extend the Settlement Agreement extended the closure from January 1 to April 30 to a smaller area within the unusual mortality event (“UME”) (Texas/Louisiana border to Franklin County, Florida).²¹ It is unclear to us how BOEM derived the four-month February 1 to May 31 restriction used in Alternatives C-F and why it has proposed to include all nearshore coastal waters. No explanation is provided in the DPEIS.²²

Second, the rationale originally offered by the plaintiff parties to the Settlement Agreement for the nearshore restriction was in response to coastal bottlenose strandings and mortalities (*i.e.*, the Northern GOM UME). However, the UME has since been closed. *See* http://www.nmfs.noaa.gov/pr/health/mmume/cetacean_gulfofmexico.htm. Moreover, none of the strandings or deaths in the UME have been attributed to deep penetration seismic survey activities. Instead, recent research demonstrates that seismic impulses at even higher thresholds fail to induce even temporary threshold shifts (“TTS”) in dolphin hearing (Finneran J.J., et al. 2015). Accordingly, no relevant scientific evidence supports a further restriction of deep

¹⁹ The mitigation measures also increase the amount of time the vessel spends surveying because shutdowns and delays necessarily result in overall increased surveying time to preserve data quality and integrity.

²⁰ On a positive note, we commend BOEM for not including a 60-minute “all clear” period in the DPEIS. We also commend BOEM for apparently not including any shutdown requirements for dolphins or sea turtles. *See* DPEIS, Section 2.11.1. These are flawed measures that were inappropriately included in the PEIS for Atlantic OCS G&G activities.

²¹ We also object to the seasonal restriction set forth in Alternative B, which is based upon the Settlement Agreement, for the reasons explained in this subsection.

²² The analysis of the coastal restrictions on page 4-90 appears to incorrectly assume that, during the 10-year period covered by the DPEIS, there would be a “2 month per year restriction”—not the four-month per year restriction that is proposed.

penetration seismic surveys, let alone suggests that such a restriction would result in any meaningful benefit to coastal bottlenose dolphin populations.²³

Third, another rationale for the nearshore restriction was that seismic activity is an additional stressor to an already stressed bottlenose dolphin population in the UME, and that such additional stress may impact dolphin breeding rates. However, there is no evidence that sound from deep penetration seismic surveys is a stressor to coastal bottlenose dolphin populations or contributes in any way to dolphin late-term pregnancy complications or perinatal and postnatal responses that would lead to increased calf mortality, or UMEs (Litz et al. 2014; Venn-Watson et al. 2015).

Fourth, there are unleased blocks within the area covered by the seasonal restriction stated for Alternatives B-F. Because existing seismic data in these areas is outdated and inadequate to inform decisions regarding future lease sales, such a restriction would significantly impede industry's and BOEM's evaluation of blocks for planned future lease sales. Moreover, given the amount of time required to acquire additional seismic data, any extension of the existing seasonal exclusion period significantly increases the likelihood that an affected deep penetration seismic survey cannot be completed within its one-year permit term, thereby increasing the overall number of surveys that will need to be conducted.²⁴

2. Reduced activity levels

In Alternative E, BOEM proposes to reduce levels of deep-penetration, multi-client seismic activities by either 10% or 25%. This measure would be a "Gulfwide strategy designed to reduce overall exposures and sound levels," the stated purpose of which is to "reduc[e] protected species cumulative sound exposures because a reduced number of surveys would be

²³ There are no data to suggest that sound is a problem for the bottlenose dolphin population in general or the mother-calf pairs in particular, and it is equally, if not more, plausible that the animals are completely unaffected by the sound. The fact that these populations may be affected by coastal pollution, vessel traffic in the estuaries, or endemic diseases is not a basis for restricting an activity that has no demonstrated adverse effect.

²⁴ Additionally, the DPEIS mistakenly assumes that the large proposed closures in Alternative F will result in the same amount of seismic survey activity being conducted elsewhere. DPEIS at 2-32. As explained in Section III.D *infra*, such closures will actually result in a reduction in the overall amount of seismic survey activity conducted in the 10-year period. Moreover, the DPEIS's assumption that closure of these areas would provide "refuge" (DPEIS at 2-32) is an anthropomorphism that is unsupported in the DPEIS by any data or science-based explanation.

performed.” DPEIS at 2-47. The Associations object to these proposed reductions because there is no legal basis for imposing them and they are arbitrary.

G&G exploration activities authorized by BOEM may be denied or conditioned if they “would probably cause serious harm or damage to life (including fish and other aquatic life).” *See* 43 U.S.C. § 1340(c)(1); *see also id.* § 1340(a)(1) (“any person authorized by the Secretary may conduct geological and geophysical explorations in the outer Continental Shelf ... which are not unduly harmful to aquatic life in such area”). BOEM may also temporarily stop off-lease exploration or scientific research activities under a permit when the Regional Director determines that the “[a]ctivities pose a threat of serious, irreparable, or immediate harm. This includes damage to life (including fish and other aquatic life) ... [and] to the marine, coastal, or human environment.” 30 C.F.R. § 551.9(a)(1); *see also* 30 C.F.R. § 551.6(a)(2) (prohibiting a permittee from causing harm to marine life). None of these requirements are satisfied based upon the information provided in the DPEIS. Even the unrealistic and overly conservative effects analysis does not conclude that there will be any “serious harm or damage” or “serious, irreparable, or immediate harm” to marine life. Moreover, such arbitrary reductions in activity levels directly contradict OCSLA’s primary mandates, particularly because no adverse effects from the original activity levels have been demonstrated. *See supra* Section III.A.

To the extent the proposed reductions are premised on the MMPA, they are also without any legal basis. Under the MMPA, NMFS has the authority to grant or deny, or to reasonably condition, marine mammal incidental take authorizations (“ITAs”). *See Ctr. for Biological Diversity v. Salazar*, 695 F.3d 893, 916 (9th Cir. 2012) (MMPA ITAs only authorize incidental take, not the underlying activity). Accordingly, any mitigation measures premised upon NMFS’s MMPA authority may only address the proposed MMPA action—*i.e.*, authorization of incidental take, not the actual exploration activities. *See id.*; *see also* 16 U.S.C. § 1371(a)(5)(A)(i) (Secretary “shall allow” incidental taking that meets applicable statutory standards).

Finally, the proposed reductions also present practical implementation problems. For example, one could perform a 3D survey with a 4,000 cubic inch array or a 2D survey with 10 km track spacing and have half or fewer the number of takes in the same number of track miles. In this example, would 50,000 track miles at half the exposure levels be translated into 25,000 track miles for purposes of calculating the remaining allocations available? How will the reductions be fairly apportioned among the various applicants over the course of a year? Such questions are not addressed at all in the DPEIS, further highlighting the impracticability of the proposed measure.

3. Buffer zones between concurrent surveys

In Alternative B, BOEM recommends an expanded 40 km buffer zone between concurrent seismic surveys within the area of concern (“AOC”) and a 30 km buffer zone between concurrent seismic surveys outside of the AOC. No scientific evidence, published studies, or other rationales are provided for this proposed measure. Indeed, to our knowledge, no

buffer zones even approaching this size have ever been required as a condition of offshore seismic authorizations.²⁵

Moreover, buffer zones have little or no value in the GOM where directional migrations have not been documented and animals are likely to be moving in a variety of directions as they track dynamic features. Additionally, unless the vessels are moving parallel to each other at the same speed and direction, the static concept of a corridor is not applicable, with the space between vessels opening and closing depending on the relative speed of the vessels and their direction. Marine mammals are unlikely to perceive anything like a corridor when the two sound sources are moving dynamically. All that vessel separations achieve are to expose the animals to a more prolonged period of sound exposure than would otherwise be the case and expand the zone that animals might avoid.

We therefore agree with BOEM's statement that "it is doubtful that separation distances would provide the necessary benefits to offset potential impacts from sound exposure." DPEIS at 2-39. Because there is no support for this proposed measure, it should be eliminated entirely from the DPEIS.

4. Exclusion zones greater than 500 meters

All of the alternatives "use a standard exclusion zone radius of 500 m (1,640 ft) around a sound source." DPEIS at 2-40. The DPEIS explains that exclusion zones "will be dependent upon the source levels, array configuration, operational parameters, and environmental and oceanographic conditions" and that the "actual extent of the acoustic isopleths around the sound source will depend on the source level, source configuration, water depth, bottom properties, and sound propagation through the immediate environment." *Id.* BOEM's suggested approach for exclusion zones will require a substantial modeling effort and will result in exclusion zones that are many times greater than those that have typically been implemented (with success) in the GOM. The expanded exclusion zones are especially concerning because they will ultimately be dictated by the marine mammal hearing group with the largest modeled radii once new group-specific acoustic criteria are implemented.²⁶

²⁵ See, e.g., 78 Fed. Reg. 35,364, 35,423 (June 12, 2014) (vessel spacing of 24 km required to avoid any effects of multiple surveys on migrating or foraging walrus). Moreover, current technology has enabled many operators to decrease typical exposure radii to less than 10 km. See BOEM, *Atlantic OCS Proposed G&G Activities Final Programmatic EIS* (2014-001), page 2-37 and Appendix D, <https://www.boem.gov/atlantic-g-g-peis/>.

²⁶ The DPEIS does not make clear which exclusion zone size is being used. For example, on page B-72, it is stated that the radius of the exclusion zone would be the predicted range at which animals are exposed to 180 dB SPL rms, and in the very next sentence it is stated that the exclusion zone is within a radius of 500 m surrounding the center of the airgun array.

In addition, exclusion zones should be based on the best available information, and if that information demonstrates that exclusion zones of less than 500 meters are warranted, then there is no basis for arbitrarily requiring a minimum exclusion zone of 500 m (if the DPEIS intends for 500 m to be a minimum). If a minimum 500 m exclusion zone requirement is not applied, the Associations would support the incorporation of power-down procedures to mitigate any potential effects. Power-down procedures acceptable to the Associations are a modified version of the procedures described at 79 Fed. Reg. 14,780, 14,797 (Mar. 17, 2014) (“Langseth IHA”).²⁷

5. Dolphin shutdowns

The DPEIS does not clearly explain whether shutdowns for dolphins are required and, if so, under what scenarios. In Chapter 2, the DPEIS appears to state that the “Expanded PSO Program” applicable to Alternatives B-F includes shutdown requirements for whales and manatees and that these requirements are further expanded in Alternative D to apply to all “marine mammals” except for bow-riding dolphins. However, Appendix B suggests that the Expanded PSO Program requires shutdowns for all “marine mammals” except that bow-riding dolphins are excluded from this requirement only for Alternative D. DPEIS Appx. B at B-23, B-24. We assume that Chapter 2 correctly describes BOEM’s intent and that none of the alternatives require shutdowns for dolphins.²⁸ However, to the extent BOEM does contemplate the application of shutdown requirements to dolphins, or to the extent commenters advocate for dolphin shutdown requirements, such measures have no support for the following reasons.

First, dolphins are mid- to high-frequency specialists and, therefore, insensitive to the low-frequency impulse sounds emitted by seismic operations. A recently published study investigated whether bottlenose dolphin exposure to airgun impulses results in TTS. The paper states that even the highest exposures, cumulative sound exposure levels of 185-195 dB re 1 μ Pa²-s did not result in TTS in any of the subjects.²⁹ Even at ranges as close as 3.9 m and with

²⁷ Specifically, the Associations would support power-down procedures similar to those in the Langseth IHA provided that: (1) power-down would be implemented only if a marine mammal is observed in or entering (not “likely” to enter) the exclusion zone; (2) power-down procedures may involve a reduction in the volume and/or pressure of the array; and (3) if a marine mammal is observed within the 500 m exclusion zone, then the reduced array would be shut down and shutdown procedures would apply.

²⁸ We agree with, and support, the analysis and conclusion reached by BOEM in Section 2.11.1 of the DPEIS. These conclusions further support our understanding that BOEM does not intend for any of the alternatives to include a dolphin shutdown requirement.

²⁹ Finneran J.J., Schlundt C.E., Branstetter, B.K., Trickey, J.S., Bowman, V., and Jenkins, K. *Effects of multiple impulses from a seismic air gun on bottlenose dolphin hearing and behavior*. 137 J. Acoust. Soc. Am. 1634-46 (Apr. 2015). The results of this study also support inclusion of frequency weighting in updated acoustic criteria.

the airgun operating at 150 in³ and 2000 psi, resulting in cumulative SEL of 189-195 dB re 1 μ Pa²s, the impulses did not result in detectable TTS in any dolphin tested. The relatively low-frequency content in airgun impulses may also have lessened the auditory effects on dolphins, which have best hearing sensitivity at much higher frequencies.³⁰ Industry observations corroborate this scientific evidence. For example, dolphins are frequently observed by personnel on seismic vessels to approach the vessels during operations to bow-ride and chase towed equipment—a direct indication of insensitivity to seismic sound. PSO observation reports indicate that there is no statistically significant difference between the frequency of dolphin sightings and acoustic detections during seismic operations when the source is active or silent. See Attachment B.³¹

Second, in areas of high-density dolphin populations, such as the GOM, shutdown requirements for a species that frequently exhibits bow-riding behavior could effectively bring all seismic activity to a halt. Implementation of the proposed measure for dolphin shutdowns will substantially increase the number of shutdowns and delays in ramp-ups, which will result in much longer surveys and significantly increased costs with no environmental benefit. See Barkaszi, *supra*, at 1 (75% of delays in ramp-ups due to presence of protected species in exclusion zone during 30 minutes prior to ramp-up were due to dolphins).

Third, any proposed measure to require shutdowns for dolphins would be without precedent. Under Joint NTL No. 2016-G02 (and previously Joint NTL Nos. 2012-G02 and 2007-G02), BOEM required seismic operators in the GOM to shut down for any whale observed in the exclusion zone. BOEM defined “whales” as all marine mammals except dolphins and manatees. The Settlement Agreement extended the shutdown requirements to manatees.³² In short, no dolphin shutdown provision has ever been required by any United States agency, and there is no information to support a changed approach.

³⁰ In a 2011 Programmatic EIS, the National Science Foundation recognized that “[t]here has been no specific documentation that TTS occurs for marine mammals exposed to sequences of air-gun pulses during operational seismic surveys.” *Programmatic EIS/OEIS for NSF-Funded & USGS Marine Seismic Research*, at 3-133 (June 2011), http://www.nsf.gov/geo/oce/envcomp/usgs-nsf-marine-seismic-research/nsf-usgs-final-eis-oeis_3june2011.pdf (recognizing 180 dB re 1 uPa (rms) criterion for cetaceans “is actually probably quite precautionary, i.e., lower than necessary to avoid TTS at least for delphinids, belugas and similar species”).

³¹ See also A. MacGillivray et al., *Marine Mammal Audibility of Selected Shallow-Water Survey Sources*, J. Acoustical Soc. Am. 135(1) (Jan. 2014).

³² Because the Settlement Agreement clearly does not apply shutdown requirements to dolphins, we assume that Appendix B is incorrect in suggesting that Alternatives B-F include shutdown requirements for all “marine mammals.”

Fourth, to the extent the DPEIS contemplates shutdowns for all marine mammals except dolphins approaching the vessel to bow-ride, implementation of such a measure is impractical. We are aware of no mitigation measures applicable to offshore exploration activities in which an observer is required to subjectively determine the intent of a marine mammal (*i.e.*, the intent to bow-ride or to approach a vessel). Determining marine mammal intent from great distances is very difficult for experienced marine mammal biologists in controlled scientific experiments, let alone for observers who will be attempting to determine dolphin intent over vast distances in the ocean environment. Based on observation reports, PSOs will be unable to confidently assess animal behavior or “intentions” because they cannot accurately determine species within the expanded exclusion zone.³³ The result is that observers will likely, out of caution, call for shutdowns in almost all instances where dolphins are observed within the exclusion zone.

In sum, any shutdown requirement applicable to dolphins in the GOM would broadly and substantially impact seismic operations without any corresponding environmental benefit and without any scientific support. The Associations respectfully request that BOEM clarify in its final PEIS that no such requirement is included in any of the alternatives.

6. Passive acoustic monitoring

Under Alternatives B-F, BOEM would require the use of Passive Acoustic Monitoring (“PAM”) as part of the Seismic Airgun Survey Protocol in certain circumstances. *See* DPEIS at 2-43. PAM is one of several monitoring techniques that offers a monitoring capability during periods of poor visibility or night conditions. PAM complements (rather than replaces) traditional visual monitoring. However, towed commercially available PAM systems can be highly variable and less robust than other in-sea integrated PAM capabilities/equipment. In addition, overall performance and capabilities of PAM are dependent on factors such as technical specification of equipment, operational setting, availability of experienced and trained personnel, and the species of marine mammals present in a given area. Mandatory use of PAM may substantially increase survey cost, require the placement of more personnel on vessels (*i.e.*, four dedicated PAM observers onboard), and potentially increase entanglement risk due to more gear being towed in the water. The Associations therefore urge BOEM to make the use of PAM optional in all alternatives, as recommended in Alternative A. *See Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1088 (9th Cir. 2013) (an agency need not consider a mitigation measure with a “prohibitively high cost” that “makes it infeasible”); *see also* 46 Fed. Reg. at 18,031 (“mitigation measures must be developed where it is feasible to do so”).

³³ *See Attachment B*. It is well known that different species will exhibit different behaviors. For example, Risso’s dolphins generally avoid vessels and rarely bow-ride, rough-toothed dolphins generally avoid vessels but do bow-ride, and common dolphins are frequent bow-riders. *See* K. Wynn & M. Schwartz, *Guide to Marine Mammals and Turtles of the U.S. Atlantic and Gulf of Mexico* (2009).

7. National standards for PSOs

The DPEIS states that observer qualifications addressed in NOAA Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys* (Nov. 2013) (“Observer Standards”) “may be required for future activities.” DPEIS, Appx. B at B-16. Although we appreciate the agencies’ attempt to clarify and standardize observer guidelines and requirements, the Observer Standards are flawed in a number of respects. It is imperative that the agencies consider public input on the Observer Standards and make the revisions necessary to ensure that the standards are workable, accurate, and appropriate before they are required. The standards should encourage adaptive technology, remote monitoring, reduction of health, safety, and environmental risks, and use of an updated reporting form that provides substantive data from observations to inform the need (if any) for additional or revised mitigation measures. The letter by IAGC, API, and NOIA, dated May 2, 2014, addressing the Observer Standards more specifically states our concerns with the Observer Standards and offers constructive solutions. *See Attachment D*. We appreciate BOEM’s consideration of our concerns.

8. Non-duplicative surveys and lowest practicable source

With respect to potential measures regarding non-duplicative surveys and use of the lowest practicable source, the DPEIS states:

The goal of these measures is to reduce the overall sound source levels in the AOI, which could be effective in achieving this goal. Overall reduction in sound input may have wide-scale benefits. As noted in Chapter 1, under the terms of the Settlement Agreement, BOEM convened two panels to determine the feasibility of including refined standards for these two requirements; however, the panels’ work on these matters is still in process and was not available at the time the analysis for this Programmatic EIS was completed.

DPEIS at 2-39. However, this characterization is incorrect because the panels’ work on these two issues has concluded and this description is not consistent with the panels’ findings. The DPEIS should be updated to reflect the panels’ findings. Consistent with those findings, the Associations’ position is that these measures would have no meaningful beneficial impact.

In addition, Appendix L incorrectly states that “[a] duplicative seismic survey is a deep-penetration geophysical survey, as defined in [the Settlement Agreement], whose acquisition parameters, design, technology, and geospatial surface location metrics make it essentially the same as an existing seismic survey.” DPEIS, Appx. L at L-14 (emphasis added). The Settlement Agreement does not define a duplicate seismic survey as being “essentially” the same as an

existing seismic survey. Accordingly, Appendix L should be revised to be consistent with the Settlement Agreement. *See NRDC v. Jewell*, Dkt. 118-2, Section VIII.A.

D. The Economic Impacts of Alternatives B-G Threaten the Viability of G&G Activities in the GOM

“Where the action subject to NEPA review is triggered by a proposal or application from a private party, it is appropriate to give substantial weight to the goals and objectives of that private actor.” *Citizens’ Committee to Save Our Canyons*, 297 F.3d 1012, 1030 (10th Cir. 2002); *see also, e.g., Sylvester v. U.S. Army Corps of Eng’rs*, 882 F.2d 407, 409 (9th Cir. 1989) (explaining that agency has a duty to take into account objectives of applicant’s project). An alternative considered in an EIS is not reasonable when it renders the applicant’s proposed project “impractical,” or not “technologically or economically feasible.” *Citizens’ Committee to Save Our Canyons*, 297 F.3d at 1031-32; *see also Sylvester*, 882 F.2d at 409 (explaining that the agency must consider whether alternative is “economically advantageous” to applicant’s objective); *Cape May Greene, Inc. v. Warren*, 698 F.2d 179, 187 (3d Cir. 1993) (noting NEPA “requires a balancing between environmental costs and economic and technical benefits”). As demonstrated below, the various measures included in Alternatives B-G threaten the operational and economic viability of G&G activities in the GOM, which will lead to fewer wells being drilled and diminish future production.

In general, BOEM’s economic analysis found in Section 4.13 of the DPEIS is inadequate, especially in the assumptions made about activity levels in the face of overly restrictive mitigation measures and the fact that the analysis appears to completely ignore the potential of reduced future drilling and production because there would not be adequate G&G data, especially seismic, available. In addition, while the DPEIS describes the potential economic impacts of the various alternatives (*e.g.*, increased cost leading to decreased profits; supply chain impacts; lost production), it does not provide cost estimates for direct, indirect and induced economic impacts over the 10-year time period, nor does it adequately account for the variability inherent in offshore oil and natural gas exploration and development. As such, stakeholders cannot evaluate the full economic impacts of the alternatives.³⁴

³⁴ BOEM notes that qualitative economic impact analyses were performed for Alternatives E and F (DPEIS at 4-395) and additional economic analyses will be conducted as part of the Regulatory Impact Analysis (DPEIS at 4-396). The impacts that were evaluated qualitatively have the potential to run into the billions of dollars and the Associations believe that full quantitative economic analysis should have been included in the DPEIS. Regardless of the source of the missing analysis, a full quantitative economic analysis should be included in the final PEIS.

In Alternatives B-F, BOEM notes in multiple places³⁵ that any seismic survey not conducted because of operational inefficiencies, seasonal shutdown, survey restrictions, or area closures could be conducted at a later time or else the vessels would move to another area of the GOM. BOEM uses these assumptions as partial justification that economic impacts of the alternatives will be either minor (Alternative C) or minor to moderate (Alternatives B, D, E, F), yet these assumptions are flawed. The potential to have surveys done in future time periods, as stated in the analysis, does not reduce the negative socioeconomic impact of an alternative. With restrictions continually in place, surveys originally planned for Year 1 would just replace surveys that would have occurred in Year 2, while even more Year 2 planned surveys would be pushed to Year 3, and so on. Over time, the ripple effect of delayed or forgone surveys will reduce overall seismic data collection, adversely impacting the industry's ability to drill new wells and curtailing future production. Timing delays large enough to affect drilling schedules are more important to potential economic impacts than seismic cost increases. BOEM does not provide estimates for the number of wells that will not be drilled and how reduced drilling will have significant negative impacts on production, government revenue, gross domestic product ("GDP"), and employment.

BOEM's analyses of the economic impacts associated with the proposed reductions in seismic surveys found in Alternatives E1 and E2 are particularly concerning:

1. BOEM assumes that reducing seismic survey activity by 10% and 25% reduces direct employment by a proportional amount, resulting in 600 to 1,500 fewer jobs and economic/GDP impacts of \$294 million to \$735 million per year. This assumption is a good approximation of a portion of the direct impacts associated with reduced seismic survey activity. BOEM also mentions indirect and induced impacts but provides no calculations or estimates. DPEIS at 4-400, 401. There is no reason not to provide these estimates. According to estimates made using the IMPLAN model, adding in the indirect and induced impacts of reduced seismic survey spending more than doubles the employment impacts and increases GDP impacts by 70%.
2. BOEM describes the real possibility that investments in new wells and platforms could be delayed and some prospective areas will not be developed at all. However, BOEM does not provide an estimate of how much activity will be forgone and thus no estimate of potential economic impacts is given. This is a significant flaw in the economic analysis of Alternatives E1 and E2 and should be rectified prior to publication of the final PEIS.

³⁵ BOEM could improve the DPEIS by eliminating or reducing the repetition in the impact analysis associated with each alternative and instead focusing on the differences for each alternative.

3. BOEM attempts to rationalize and minimize the potential impacts of Alternatives E1 and E2 by highlighting “the substantial declines in oil and gas prices since mid-2014 will likely curtail oil and gas exploration activities, implying that G&G activities may decline in absence of Alternative E.” DPEIS at 4-391, 392. However, the economic impacts are an estimate of future activity comparing the potential impacts with and without the proposed policy, not a comparison to an activity level in the past or a speculation about future oil prices as drivers of exploration. This comparison does not justify not including potentially large impacts of lost drilling activity.
4. On pages 4-391 and 392, BOEM makes several statements regarding potential impacts of Alternative E that are not relevant to the economic analysis or are not justifiable. In particular, whether the impacts are “nominal or minor” relative to the overall economy of all the coastal states is irrelevant. The full economic impacts of the action, in and of itself, should be estimated. The statement that “the majority of workers that are displaced from the G&G industry would likely be able to find employment in the region” is neither justified nor plausible, especially in the case of non-maritime workers on seismic survey vessels.
5. The statement that United States production will depend “on the extent to which oil and gas companies divert capital from offshore oil and gas development to onshore development in the US” is highly misleading. DPEIS at 4-401 and 4-403. Capital will move globally, not just within the United States. Restricted offshore GOM capital expenditures will likely go to the best second alternative, which will not necessarily be in the United States. Certain offshore specific assets, such as drilling rigs, will definitely be deployed in foreign offshore markets, not U.S. onshore.

The analysis BOEM has provided for Alternative F is no better. The potential economic impact would be dependent on the number of quality oil and gas targets in the four areas. In addition, there are at least 5,350 active leases in these areas whose potential value would be greatly compromised. Any current investment in these areas would be essentially stranded and the value of lost revenue could be in the billions of dollars, yet BOEM has not provided estimates for these lost opportunities.

Finally, BOEM has determined that Alternative G—a complete halt to seismic surveys—would only have a “moderate” socioeconomic impact. This is a stunning remark coming from BOEM, suggesting it does not grasp that offshore oil and gas exploration and development fundamentally require seismic data acquisition in order to pursue and support ancillary activities. Without seismic data, offshore oil and gas exploration and development would simply not be economically viable. The complete collapse of the offshore oil and natural gas industry in the GOM, including the loss of all direct, indirect and induced jobs and GDP contributions for operations in federal waters, would hardly be a “moderate” impact. The impacts of shutting down seismic surveys in the GOM are clearly “major” and Alternative G should be dropped from further consideration.

In sum, BOEM has failed to provide an adequate accounting of potential economic impacts for stakeholders to make an adequate assessment of the practicability or feasibility of the proposed alternatives. The Associations respectfully urge BOEM to conduct the required quantitative analyses and provide the findings for appropriate consideration going forward.

E. The DPEIS Fails to Use Recently Issued Acoustic Criteria and Presents an Unnecessarily Confusing Acoustic Analysis

In August 2016, NOAA issued its *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing* (the “Guidance”). The Guidance establishes acoustic criteria for evaluating Level A harassment and TTS. Despite the availability of drafts of the Guidance and the scientific bases for the Guidance for many months prior to August 2016, the DPEIS’s exposure modeling analysis does not use the Guidance. See DPEIS at 1-17 and 1-20. The Associations assume that BOEM will use the Guidance in subsequent action-specific NEPA analyses.³⁶ However, even if this assumption is correct, BOEM must clarify and better explain the relevance of the Guidance in the DPEIS.

For example, the DPEIS states that “at a first glance, there are differences between the values [generated by the Guidance and by the DPEIS exposure modeling], but they do appear significant at a programmatic level.” DPEIS at 1-18. It is not clear from this statement whether BOEM intends to say that the differences are or are not likely to be significant at the programmatic level considered in the DPEIS. Additionally, the DPEIS states that “there is the potential for some fairly large differences in results from the modeling done by BOEM and the 2016 NMFS acoustic guidance” and cites an example for low-frequency (“LF”) cetaceans. However, this example makes a number of simplifying assumptions, such as “most of an airgun’s energy is produced in the 100- to 300-Hz frequency band.” *Id.* This assumption is not entirely correct because sounds produced by airguns contain substantial energy from 10 to 60 Hz. Additionally, the -13 dB difference between the two frequency weighting functions noted in the DPEIS are calculated by considering only the 200 Hz frequency band, while substantial differences between the frequency weighting functions are present from 30 to 1,000 Hz.

As another example, for mid-frequency (“MF”) and high-frequency (“HF”) cetaceans, the frequency weighting curves shown in the DPEIS are even more dramatically different across the 100 to 300 Hz band selected to represent airgun sounds. *Id.* However, the preliminary analysis in the DPEIS does not address how this may dramatically reduce the area or volume within which MF and HF cetaceans may be considered exposed above the criteria. Instead, the DPEIS goes on to address high resolution geophysical (“HRG”) sources and indicates they would be evaluated as non-impulsive sources. Treating HRG sources as non-impulsive would be a break from traditional assessments, yet this is not explained or justified in the DPEIS or its appendices.

³⁶ We also assume that NMFS will apply the Guidance in its evaluations of MMPA ITAs associated with GOM activities.

Moreover, the summary paragraph on page 1-19 does not provide an example similar to that for LF cetaceans to support why BOEM believes the number of exposures of MF and HF cetaceans would “remain the same or slightly reduced overall” if the Guidance were used.

Additionally, the analytical methods and criteria that are used in the acoustic analyses supporting the Appendix D modeling are less than straightforward. For example, starting on page 4-12 of the DPEIS, BOEM refers to the NMFS 1995 criteria (180/160 dB re 1 μ PaSPL rms), a set of 2012 weighting functions (*e.g.*, those used in the modeling for the DPEIS) for which a reference is not provided, and to the NMFS July 2016 criteria. Appendix D uses the NMFS 1995 criteria, but applies Southall et al. (2007) M-1 weighting to those values, which were originally unweighted values. DPEIS, Appx. D at D-174. The Appendix D modeling also uses Southall et al. (2007) SPL peak Permanent Threshold Shift (“PTS”) onset values, but for LF cetaceans creates its own PTS onset threshold of 192 dB re 1 μ Pa² s SEL by subtracting 6 dB from the MF cetacean onset value of 198 dB re 1 μ Pa² s (another precaution layered on top of already precautionary numbers). *Id.* at D-55. Another example of unclear development of a threshold value appears in the very next paragraph where the analysis cites a value of 187 dB SEL as the MF cetacean threshold, derived by using a beluga TTS onset of 186 dB, applying Finneran and Jenkins (2012) Type II M-weighting to derive a weighted value of 172 dB and then adding 15 dB to produce a PTS threshold for MF cetaceans of 187 dB. Obviously, the methods for deriving the criteria used in the analysis are hardly clear. Nowhere in Appendix D or the body of the DPEIS is there a simple table listing the threshold values that were applied in the exposure analysis.

In sum, the failure of the DPEIS to use the Guidance in its effects analysis is legally and scientifically tenuous. *See N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1086-87 (9th Cir. 2011) (“Reliance on data that is too stale to carry the weight assigned to it may be arbitrary and capricious.”). Proper application of the Guidance in action-specific NEPA evaluations may remedy this shortcoming; however, to the extent the final PEIS does not address this issue in a more robust manner, NMFS’s future reliance on the final PEIS for the MMPA incidental take rulemaking process could be jeopardized. It is imperative that the public be provided a reasonable opportunity to carefully review and comment on the application of the Guidance as it directly pertains to the current action. Regardless of its future application, if BOEM does not intend to use the Guidance in the modeling that will support the final PEIS, then it must provide a more developed and accurate assessment of the differences that result from application of the Guidance compared to the criteria and methods actually used. BOEM must also more clearly explain those criteria and methods in the final PEIS.³⁷

³⁷ As the Associations addressed in three comment letters submitted during the process for developing the Guidance, there are technical flaws in the Guidance. We have attached those three comment letters to this letter, and request that they be included in the administrative record for this NEPA review process. *See Attachment E.*

F. The Appendix D Modeling Inconsistently and Unreliably Uses Marine Mammal Population and Density Data

The Phase I modeling in Appendix D uses Navy Operating Area Density Estimates (“NODES”) and NMFS Stock Assessment Reports (“SARs”) marine mammal population data. However, the Phase II modeling inconsistently uses the 2016 Duke model of animal distribution and abundance. The following summarizes some of the problems associated with Appendix D’s use of varying datasets and models related to marine mammal abundance and density.

First, a problem with habitat-correlated density modeling is that the model may not capture all the habitat variables that are important to the animals, and consequently places modeled animals in areas where they never or rarely go. For example, Bryde’s whales are rarely if ever seen outside De Soto Canyon, yet the Duke model places modeled Bryde’s whales in relatively high density at the continental shelf edge from Texas to the Florida Straits because the habitat suitability model indicates that they “could” use those places. The Duke model thus results in the calculation of densities of Bryde’s whales in Zone 4 of the Appendix D’s seven zone system when that clearly is not supported by the available sighting data.

Second, the Appendix D makes unsupported revisions to some results from the Duke model, which were themselves arbitrary or poorly supported. For example, the Duke model places sperm whales and Kogia whales in 500 m of water even though the available sighting data shows that they occur in shallower water. The Appendix D modeling, however, goes one step further and pushes all sperm whales into 1,000 m water depth or deeper, further exaggerating the disparity between actual observations (which tend to be biased toward shallower water) and the model (which uses “expert knowledge” to put the animals where the modeler thinks they ought to be).

Third, the Appendix D modeling evenly spreads species for which little data are available (*e.g.*, killer whales, false killer whales, Fraser’s dolphins) across all habitats the modelers deem appropriate (generally deeper water, Zones 4-7). Some species, such as Fraser’s dolphins and false killer whales, are therefore assumed to be abundant and widespread in areas where they are historically seldom seen.

Fourth, rather than use a specific value for each 100 km square, the Appendix D modeling averages the values from each 100 km² box across an entire zone containing hundreds or thousands of 100 km² boxes. This enables the placement of animals into the outermost Zone 7 where there is little or no data and therefore no modeling by Duke. By expanding the Duke averages into areas outside the scope of the model, Appendix D increases the total number of animals present beyond the predictions of the SARs, NODES, or the Duke model. Appendix D presents the averaged values as a minimum, maximum, and mean, which is an appropriate way to convey some of the statistical uncertainty about the model numbers (*see* DPEIS, Appx. D at D-201), but there is insufficient information to determine how these values were obtained from the source information.

G. The Cumulative Effects Analysis in Appendix K Should Be Eliminated

Appendix K contains novel concepts that are inconsistent with a substantial amount of scientific literature addressing the topics of hearing masking and chronic effects of sound. For example, Appendix K presents new concepts, such as “lost listening area,” which have no scientific precedent. Additionally, Appendix K introduces novel risk metrics like annual cumulative SEL and equivalent continuous sound level (“ L_{eq} ”) that are not biologically realistic concepts (pages K-22 and K-24), and other ideas that have no apparent basis, such as the Cumulative and Chronic Exposure metric (page K-10). Equally concerning, the novel analysis in Appendix K is introduced, for this first time, without any serious peer-review or expert evaluation.

Appendix K presents a hypothetical analysis of “lost communication space” for Bryde’s whales (pages K-32 to K-41) without any evidence to support an actual (not hypothetical) baseline for this or any related species. Communication space is considered to be the maximum detectable range of a sound, which far exceeds the actual communication space for any species, terrestrial or marine. Another omission in Appendix K is the lack of reference to a recent and very thorough review of the subject of hearing masking (Erbe et al. 2015). Instead, Appendix K primarily references Clark et al. (2009) for masking, even though it has been demonstrated to be an incomplete model that overestimates the risk of masking.

In addition, the Appendix K analysis is based on assumptions about hearing and hearing masking that are clearly incomplete and overly conservative, such as assuming that the animal requires signal excess of 10 dB to detect a conspecific call (page K-17), when the standard in the literature is detection at -3 to -6 dB below ambient. Appendix K treats received sound as being the same at all depths (2D “disk” model of masking, page K-17), and no directional release from masking is provided—not because the animals cannot use the 3 to 12 dB of gain they get from directionality, but because the analysis suggests that the survey tracks are “randomly oriented” (page K-19). This inability to determine the angular resolution between receiver, conspecific caller, and the seismic source is puzzling because the Phase I and Phase II exposure models provide very specific direction-dependent transmission loss model data and are dynamic 4D models that should easily yield the necessary information to insert spatial release from masking in the communication space equation. Instead, a generic “signal processing gain” term is used to account for the various features of a signal that enable the receiver to pick it out of sound. Finally, Appendix K uses an unrealistic and simplistic formula (Sirovic et al. 2014) for determining the bandwidth of the signal (to the human, not the whale listener) and call length (without redundancy or signal variance and periodicity), ignoring substantial literature on this topic for humans and other species (page K-20).

In sum, Appendix K is premature, inappropriate, and not consistent with the best available science. Moreover, its relevance to the DPEIS is not explained by BOEM. Because of its many defects, Appendix K should be removed from the DPEIS.

H. The Analysis of Potential Effects of Seismic Activities on Sea Turtles Can Be Improved

The DPEIS adequately reviews the literature regarding sea turtle hearing and accurately assesses what is known about the frequency range of turtle hearing based on the best available science. However, the DPEIS's sea turtle effects analysis (Section 4.3) fails to sufficiently address sea turtle hearing thresholds at best sensitivity as reported in the scientific literature. These values, which range from 93 to 117 dB at the most sensitive frequencies, are reported in Appendix E but there is no discussion of the meaning of those values. Although the data on sea turtle hearing "are too limited to be definitive because of the low numbers of individuals tested," the best available science demonstrates that sea turtle hearing is substantially less sensitive than marine mammal and fish hearing. By comparison, peak sensitivity thresholds of approximately 30 or 40 dB are the most sensitive frequencies in some odontocetes, and peak sensitivity thresholds of approximately 50 dB are most sensitive frequencies observed in some fish species. See Popper et al. (2014) at 9 (*see* audiograms). The DPEIS should include a more detailed assessment of sea turtle hearing thresholds at best sensitivity as part of the effects analysis.

I. The Potential Effects of Seismic Activities on Fish and Fish Resources Are Insignificant

Seismic survey activities do not result in any significant adverse effects to fish populations or to fisheries. Marine seismic surveys have been conducted since the 1950s and experience demonstrates that fisheries and seismic activities can and do coexist. There has been no observation of direct physical injury or death to free-ranging fish caused by seismic survey activity, and there is no conclusive evidence showing long-term or permanent displacement of fish. Any impacts to fish from seismic surveys are short term, localized, and not expected to lead to significant impacts on a population scale.³⁸

³⁸ See *Science for Environment Policy, Future Brief: Underwater Noise, European Commission*, June 2013: http://ec.europa.eu/environment/integration/research/newsalert/pdf/FB7_en.pdf; *Stocks at a Glance – Status of Stocks*, 2011, U.S. Department of Commerce, NOAA: http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/archive/2011/2011_status_of_stocks_fact_sheet.pdf; Boeger, W.A., Pie, M.R., Ostrensky, A., Cardoso, M.F., 2006. *The Effect of Exposure to Seismic Prospecting on Coral Reef Fishes; Brazil. J. Oceanogr.* 54, 235-239; 3D marine seismic survey, no measurable effects on species richness or abundance of a coral reef associated fish community. *Mar. Pollut. Bull.* (2013), <http://dx.doi.org/10.1016/j.marpolbul.2013.10.031>; Hassel, A., Knutsen, T., Dalen, J., Skaar, K., Lokkeborg, S., Misund, O.A., Osten, O., Fonn, M., Haugland, E.K., 2004. *Influence of seismic shooting on the lesser sand eel.* *ICES J. Mar. Sci.* 61, 1165-1173; Pena, H., Handegard, N.O. and Ona, E. 2013. *Feeding herring schools do not react to seismic air gun surveys.* *ICES J. Mar. Sci.*, <http://icesjms.oxfordjournals.org/content/70/6/1174.short?rss=1>; Saetre, R. and E.

(continued . . .)

Seismic source vessels move along a survey tract in the water creating a line of seismic impulses. As the seismic source vessel is in motion, each signal is short in duration, local, and transient. There is no conclusive evidence showing long-term or permanent displacement of fish.³⁹ Similar seismic surveys conducted for research in the Atlantic OCS did not result in any detectable effects on commercial or recreational fish catch, based on a review of NMFS's data from months surveys were conducted, which noted that "there was absolutely no evidence of harm to marine species" (including fish).⁴⁰ Additionally, in the GOM, where G&G activities have routinely occurred for over 40 years, seafood harvested from the OCS is worth approximately \$980 million annually and the fishing industry directly supports in excess of 120,000 jobs, suggesting that G&G activities can occur without negatively impacting commercial fisheries.

Finally, seismic and other geophysical surveys also do not result in closing areas to commercial or recreational fishing. During surveys, the survey crews work diligently to maintain a vessel exclusion zone around the survey vessel and its towed streamer arrays to avoid any interruption of fishing operations, including the setting of fishing gear. As with all multiple uses of offshore waters, there must be a certain level of coordination by all parties. At sea, coordination is regulated by the U.S. Coast Guard under the International Regulations for Preventing Collisions at Sea, requiring a Local Notice to Mariners specifying survey dates and locations.

(. . . continued)

Ona, 1996. *Seismic investigations and damages on fish eggs and larvae; an evaluation of possible effects on stock level*. *Fisken og Havet* 1996:1-17, 1-8.

³⁹ Although some studies have shown that various life stages of fish and invertebrate species can be physically affected by exposure to sound, in all of these cases the subjects were very close to the seismic source or subjected to exposures that are virtually impossible to occur under natural conditions. For example, frequently cited experimental studies such as Skalski et al. (1992), Lokkeborg et al. (2010), Engas (1996), and Wardle (2001) employed artificially concentrated sound within hundreds of meters of the fish under observation and the fishing vessels. As Lokkeborg et al. (2012) noted in a recent review of the literature, "Seismic air gun emissions distributed over a large area may thus produce lower sound exposure levels and thus have less impact on commercial fisheries." As another example, Aguilar de Soto (2013) exposed scallop larvae to noise at loud volume for up to 90 hours at a distance of 9 centimeters, which is virtually impossible to occur outside of experimental settings.

⁴⁰ See *New Jersey v. Nat'l Sci. Found.*, No. 3:14-cv-0429 (D. N.J.), Federal Defendants' Brief in Opposition to Plaintiffs' Motion for Declaratory and Injunctive Relief at 25-26 (citing Exhibit D, Higgins Decl. ¶ 21, Exhibit D, Mountain Decl. ¶ 8 (July 7, 2014)).

For these reasons, the effects of seismic activities on fish and fish resources are most accurately described as “nominal” (to use the DPEIS’s impact categorization values). We therefore object to the mischaracterization of impacts to commercial fisheries as “minor.” *See* DPEIS at 2-35.

J. The Adaptive Monitoring Program Must Be Consistent with Applicable Law

The DPEIS states that BOEM and NMFS are presently developing an “adaptive monitoring program” that will be implemented for the life of the anticipated MMPA incidental take regulations and “will outline high-level monitoring objectives focused on understanding how and to what extent G&G activities may affect marine mammals in the Gulf of Mexico.” DPEIS at 1-13. However, the DPEIS includes very little information about the adaptive monitoring plan because, according to the DPEIS, “an opportunity for public input on the monitoring plan would occur through the process that NMFS undertakes in response to BOEM’s petition for rulemaking under the MMPA.” DPEIS at 1-14.

The Associations have a strong interest in environmental monitoring—both to better understand the environment in which our members work, but also to mitigate potential risks of activities to living marine resources. The Associations support efforts that improve the quantity and quality of information related to determining the nature and magnitude of the potential effects of offshore G&G activities on marine mammals. Such information assists with developing reasonable and workable incidental take MMPA authorizations, including appropriate mitigation measures to minimize incidental take, and correctly assessing the type and amount of incidental take that occurs in the course of G&G operations. In this light, the Associations support both ongoing and future research endeavors by industry and its partners that help to inform the understanding and mitigation of potential effects of G&G activities on marine life in the GOM. We also support agency efforts to improve the collection and use of the best available science consistent with the requirements and limits of the MMPA.

Nonetheless, the Associations have expressed concern on multiple occasions that the agencies’ envisioned monitoring requirements for the forthcoming MMPA regulations for geophysical surveys in the GOM will exceed the authority granted to NMFS. We have explained in detail that the MMPA does not authorize NMFS to require as a condition of an ITA the preparation or development of a large-scale, expansive monitoring plan that reaches beyond the time and area in which site-specific activities are undertaken or the performance of actions related to such a plan. The comments detailing these concerns are attached as Attachment F so that they may be included in the administrative record supporting the final PEIS. The Associations look forward to working collaboratively with BOEM and NMFS to complete the preparation of a legally compliant and operationally effective monitoring program.

K. The DPEIS's MPA Discussions and Findings Must Be Clarified, Improved, and Justified

The DPEIS's discussion of Marine Protected Areas ("MPAs") is unclear and confusing. We have noticed that BOEM tends to conflate various legally designated and non-legally designated terms, such as "Biologically Important Areas," Environmental Important Areas. For example, "Deepwater MPA" appears to be a new construct because Deepwater MPAs are not, to our knowledge, formally designated regions. The DPEIS describes "Coastal MPAs" as consisting of national parks, national wildlife refuges, national estuarine research reserves, and State-designated MPAs (DPEIS at xxxv), but "Offshore MPAs" (a new term) are described as consisting of national marine sanctuaries (NMSs), Deepwater MPAs, and fishery management areas, with no further explanation of what defines a Deepwater MPA. Of the Offshore MPAs listed, it appears that the brine pool and chemosynthetic MPA sites (*e.g.*, Green Canyon ["GC"] 233 Brine Pool, GC 234 Chemo Community, and Bush Hill Chemo Community) are deeper than 1,000 feet, but many of the coral and hardbottom sites listed are no deeper than 1,000 feet.⁴¹ In addition, Section 2.8-1 of the DPEIS (page 2-16) describes four "deepwater areas" for closure (the Central Planning Area ("CPA") Closure Area, the Eastern Planning Area, the Dry Tortugas Closure Area, and the Flower Gardens Closure Area).⁴² BOEM should more clearly characterize these areas and explain their significance to the DPEIS's analysis of seismic activities. In particular, closure of the CPA will lead to a significant loss of economic opportunities as many leaseholders in this area will be unable to fulfill lease commitments.

The DPEIS also suggests, without supporting explanation, that MPAs may be used to restrict activities. *See, e.g.*, DPDEIS at 4-261 ("All sites listed are afforded some degree of protection based on their associated management plans."); *id.* at 3-29 ("All authorizations for G&G surveys proposed within or near these [specific benthic locations and MPA] areas would be subject to the review noted previously to facilitate avoidance."); *id.* at 4-269 ("While seismic surveys employing airgun arrays and hydrophone streamers are not currently precluded from conducting surveys over deepwater MPAs, other G&G activities may not be allowed in designated No Activity Zones."). Although it is appropriate under NEPA to describe these areas as parts of the existing environment that have ecological significance, if BOEM and/or NMFS intends to use these areas as a basis for implementing additional restrictions on activities, then

⁴¹ We understand that the South Atlantic Fishery Management Council has designated Deepwater MPAs (ranging from about 200 to 1,000 feet deep) to protect deepwater fish species, but it does not appear that the Gulf of Mexico Fishery Management Council has made similar designations.

⁴² BOEM's definition for "deepwater" had been 300 m (~1,000 feet) per NTL 2009-G40.

that intention must be disclosed and clearly explained, and the supporting legal authority must be identified.⁴³

L. The DPEIS Is Poorly Organized and Presented

Respectfully, the DPEIS is poorly organized and presented. For some sections and appendices, it is almost impossible to clearly review and understand many of the underlying technical analyses. The body of the DPEIS contains a substantial amount of both conflicting and redundant material, which is repeated in appendices, and in appendices to appendices. For example, Appendix D itself has six appendices, many details of which conflict with portions of the body of the DPEIS or with Appendix D itself. As another example, sections addressing threshold criteria in the body of the DPEIS (pages 4-12; 4-33; 4-45) and in Appendix D (D-50; D-25; D-56; Table 6) conflict with Appendix H. Assumptions and conclusions are buried in the details of Appendix D, but the other documents (*i.e.*, the DPEIS and Appendix H) present no conclusions that clearly correspond to those presented in Appendix D's Phase II model. The three sections on threshold criteria in these three separate documents appear to have been written by three different people who did not view each other's work.⁴⁴ There appears to be hundreds of referential and typographical errors in the DPEIS and its appendices. In short, the overall quality and clarity of the analyses presented in the DPEIS and its appendices is poor and inhibits meaningful review and input, particularly in light of the relatively short period that was provided for review and comment on the DPEIS.⁴⁵

M. The DPEIS's Flaws Place Future Federal Actions at Risk

The flaws in the DPEIS (as described above), to the extent they are not cured in the final PEIS, may have unintended and undesired negative consequences for any agency that relies on the final PEIS for the authorization of future federal actions and, specifically, for the issuance of MMPA ITAs in the GOM. For example, the DPEIS makes unrealistic, incorrect effects findings that will almost certainly contradict findings made in reviews of future federal actions (assuming those reviews are performed correctly). Additionally, the DPEIS's failure to address the effects of mitigation measures will very likely contradict subsequent MMPA Section 101(a)(5)

⁴³ The "moderate" effects finding for marine mammals in MPAs lacks rational support. There is no explanation in the DPEIS why impacts reach the level of "moderate" for marine mammals inside of MPAs when MPAs represent relatively small areas inside the AOC.

⁴⁴ Appendix D also refers to a set of Excel workbooks (*see, e.g.*, D-213) that cannot be found on the BOEM website and for which a link is not otherwise provided.

⁴⁵ In addition to the substantive errors addressed in this comment letter and the associated attachments, the Associations have identified many typographical errors and minor editorial mistakes in the DPEIS. The Associations plan to provide BOEM with a table of these errors and mistakes after the close of the comment period.

evaluations, which require the permitting agency to consider the effects of mitigation measures in making a determination that the authorized take will have a “negligible impact” on marine mammal species or stocks. 16 U.S.C. § 1371(a)(5)(A), (D). By failing to evaluate the actual anticipated effects of G&G activities in the GOM, and by failing to consider the effects of mitigation measures, BOEM has created a scenario in which the final PEIS will likely (if not corrected) present significant contradictions and inconsistencies with subsequent action-specific regulatory processes. For this additional reason, the serious flaws in the DPEIS must be corrected before a final PEIS is issued.

IV. CONCLUSION

As explained above, the performance of seismic and other geophysical surveys is critical to the federally mandated “expeditious and orderly development” of GOM OCS. A wealth of data and information demonstrates that these surveys will have no more than a temporary, localized, and negligible impact on marine life. Unfortunately, the DPEIS presents analyses that are contrary to this information and otherwise flawed in many respects, including but not limited to, the (1) failure to consider the environmental benefits of the proposed action; (2) reliance on an effects analysis that is unlawfully premised on a worst case scenario and overly conservative, flawed assumptions; (3) failure to consider the effects of mitigation measures; (4) failure to use the best available scientific information; (5) unreliable and inconsistent use of marine mammal population and density data; (6) recommendation of mitigation measures that are infeasible and unsupported; (7) reliance on a woefully inadequate economic impacts analysis, and (8) use of an unsupported and novel cumulative effects assessment (Appendix K).

For the reasons stated above, Alternative A is the only alternative that may be consistent with the best available science, operational feasibility, and applicable law. The Associations strongly object to all of the other Alternatives presented in the DPEIS for all of the reasons stated above and particularly because BOEM reaches the same effects conclusions for Alternative A as it does for all of the other Alternatives (except Alternative G). Before the DPEIS is issued as a final PEIS, all of the flaws detailed in this comment letter and the associated attachments must be addressed and corrected.

[CONTINUED ON NEXT PAGE]

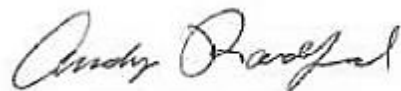
Dr. Jill Lewandowski
November 29, 2016
Page 40

We appreciate your consideration of all of the comments set forth in this letter, which are intended to be constructive and to facilitate the improvement of the scientific and legal integrity of the DPEIS. Should you have any questions, please do not hesitate to contact Nikki Martin (713.957.5068) or Andy Radford (202.682.8584).

Sincerely,



Nikki Martin
International Association of Geophysical Contractors
President



Andy Radford
American Petroleum Institute
Sr. Policy Advisor – Offshore



Jeff Vorberger
National Ocean Industries Association
Vice President Policy and Government Affairs



Greg Southworth
Offshore Operators Committee
Associate Director

ATTACHMENT A

BOEM **BOEM'S PRECAUTIONARY MODEL VS BEST AVAILABLE SCIENCE (BAS) MODEL** **BAS**

1

SOUND SOURCE



X **2** X

SOUND FIELD



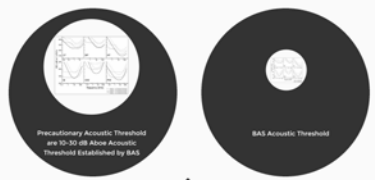
X **3** X

AFFECTED ANIMAL POPULATION



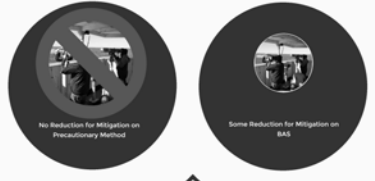
X **4** X

ACOUSTIC THRESHOLDS



X **5** X

MITIGATION



= **Results** =

FINAL RESULTS OF PRECAUTIONARY METHOD VS. BAS



BOEM has analyzed a strawman through the DPEIS by relying on unrealistic assumptions as opposed to the best available science as U.S. law requires. The above graphic shows how precautionary assumptions stacked upon each other lead to a multiplicative over estimation of impacts that will never occur.

Total Multiplicative Precautions (short list)
 [Source+Propagation (90-120x)] x [abundance (2x)] x [conservative threshold criteria (100-10,000x)] x [no recovery factor (10-100x)] x [no allowance for aversion (6.7 x Level A)] x [no mitigation (1.1 - 2x)] = 1.3 million to 3.2 billion more takes than the number that would be produced by using average or most likely values for all variables.

SYNOPSIS OF PRECAUTIONARY ASSUMPTIONS

GULF OF MEXICO DPEIS

Bob Gisiner, IAGC

Background	p. 1
Summary of Precautions	p. 2
Recommendation	p. 3
Detailed List of Precautions ..	p. 4-12

BACKGROUND

The BOEM Gulf of Mexico DPEIS is structurally very similar to most recent NEPA analyses for environmental risk from manmade sound in the marine environment. The interaction of the source, the propagation of the sound from source to animals, and the resulting sound exposures interact to produce a calculated estimate of effect, usually stated as MMPA Level A and Level B “takes”, since the MMPA requires that the impact of an activity be quantified in those terms (NEPA and ESA do not have such strictly numerical requirements for estimating impact).

Historically and in this EIS, each element of the model is assessed relative to the available information and a value is selected that is considered sufficiently conservative or precautionary, given uncertainties about the scientific data or about natural variability in factors such as animal distribution, location and movement of the sound source or the sound propagating properties of the water column. Selection of conservative values in multiple steps of the model leads to an outcome that is not an average of the precautionary assumptions, or even an addition of uncertainty, but multiplication of each uncertainty by the uncertainty in the other steps. Simply put, doubling the expected value for four different parts of the model does not double the outcome, nor does it result in a $2+2+2+2 = 8$ -fold increase in the predicted outcome. Instead the effect of multiple precautions is multiplicative, and the outcome is $2 \times 2 \times 2 \times 2 = 16$ -fold more than if the model was run with ‘most likely’ values like averages. Doubling all values out of precaution therefore does not predict an outcome of 200 takes when 100 was the most likely expected outcome, but instead produces an outcome of 1,600 takes.

As we will see from the following quick-look at the GOM DPEIS, there are many more variables in the model than the simple four variable example described above. And the levels of precaution are not simple doubling of expected values, but multiples that may range from addition of some percentage (less than doubling) to increases that are orders of magnitude greater than the “most reasonable” value (orders of magnitude are multiples of ten, such as 10, 100, 1000, etc.). The downstream consequences are also more complicated than the simple two times two example above, with some variables interacting in other than simple multiplicative ways.

For example, use of an 8000 cubic inch sound source rather than the mean or median of sizes actually used (5,600-5,100 cubic inches) would appear to only create a difference of about 30-37%, but that

difference in size produces a difference in source sound level of 3-6 decibels, depending also on the number of elements in the source array. The difference in source level needs to get translated into a difference in the area covered by the sound from the two different sources, because that will change how many animals are within the two respective areas, all other factors being equal. The 33-37% difference in the size of the two arrays translates into an increase of some 45-50% (roughly) in the area exposed and therefore the number of animals taken. That is, if one uses an 8000 cubic inch array as the precautionary standard and that results in a take estimate of 150 individuals, then use of the more likely mean value of 5,600 cubic inches will result in a take of 100 individuals. Needless to say, this is a pretty large downstream consequence from alteration of a single value by what might superficially look like a pretty small amount. As we will see, factoring in the other parts of the model where similar conservative assumptions are exercised results in a prediction of takes that is millions, possibly billions, of times greater than the outcome predicted by using most likely outcomes only.

[for ease of locating information, references to the DPEIS are to the .pdf file page number, not the page numbers on the document itself]

SUMMARY OF PRECAUTIONARY ASSUMPTIONS IN THE BOEM DPEIS

This list includes only the most obvious and clearly unsupported precautionary assumptions of the model:

- Source
 - Extreme array size and number of elements increases exposures by 1.5 to 2 times.
 - Six additional precautionary assumptions were not analyzed.
- Propagation
 - Conservative or simplifying assumptions about the propagating environment add 10-16 dB minimum to the propagated sound.
 - Combined with the precautionary source assumptions, this results in a 90-120 time increase in estimated takes, all other variables being equal.
 - Six additional precautionary assumptions were not analyzed.
- Animal Abundance, Density and Movements
 - NMFS's Stock Assessment Reports ("SARs") and Duke Model differ on average by a factor of 2. A minimum compromise for uncertainty would be to reduce abundance and density estimates by 25% to 1.5 times SAR.
 - Three specific groups showed even more extreme differences, but were not separated in this simple analysis: expansion of Bryde's whale habitat leading to more takes; large increases in numbers of deep divers (beaked whales, sperm whales, Kogia); extremely large increases in pelagic dolphin numbers (over 80 times for two species)
 - Five additional precautionary assumptions were not analyzed.
- Threshold Criteria
 - Level A calculations from SPLrms and SEL used precautionary assumptions that overestimated take by 10-1,000 times. SPLpeak takes were overestimated at least twofold by using 6 dB instead of 15 dB to derive PTS from TTS.

- Level B calculations make generous assumptions about the likelihood of response and assume all exposures that exceed threshold are biologically significant, over-estimated biological consequence by at least 1,000 to more than 100,000 times.
- No allowance for reduced Level A due to behavioral avoidance of the source (reductions of Level A up to 85%).
- No allowance for hearing recovery between pulses (likely reduction of cumulative SEL from a continuous pulse train of 50% or more); no allowance for hearing recovery between passes separated by hours or days (fewer than 1% of successive passes, those within 8 hours or less, will accumulate and trigger Level A criteria).
- Four additional contributors to precautionary over-estimation were not analyzed, including application of weighting functions to impulse SPL metrics.
- Mitigation
 - No reduction in take was allocated for mitigation. While setting a specific value for mitigation may be difficult, it clearly is not zero and therefore some reduction of takes due to mitigation should be factored into the model.
 - Reductions from multiple proposed mitigations were not estimated.
 - Vessel separation and dolphin shutdowns modeled, with questionable effectiveness
 - Increased time/area closures and 10-25% effort reductions were not estimated.
- Total Multiplicative Precautions (short list)
 - [Source+Propagation (90-120x)] x [abundance (2x)] x [conservative threshold criteria (100-10,000x)] x [no recovery factor (10-100x)] x [no allowance for aversion (6.7 x Level A)] x [no mitigation (1.1 – 2x)] =
 - **1.3 million to 3.2 billion** more takes than the number that would be produced by using average or most likely values for all variables.

RECOMMENDATION

Re-calculate takes using average or most-likely values, quantify and report the overall level of uncertainty in the modeling results, and add an agreeable level of precaution to the final results, not the individual elements.

- Maybe double is reasonable?
- A statistical measure of extreme confidence like 3 sigma still covers 99.7% of all possible outcomes (370 times the central value) and is not nearly so unreasonable as the present model
- It seems unlikely that 1 million to 3 billion times the most likely outcome, which covers 99.9999% or more of all possible outcomes, is a reasonable level of 'precaution'.

PRECAUTIONARY ASSUMPTIONS

The Sound Source.

As discussed above, BOEM treats all geophysical surveys as if they were all conducted with the largest arrays in use. The nominal value of 8000 cubic inches is an approximation of the maximum array size currently used in the Gulf, typically 7900 to 8500 cubic inches. Based on a quick survey of IAGC members over the past decade, a little less than one third of all surveys use arrays of that size. The other two-thirds of surveys in the GOM use arrays that range in size from 6000-2000 cubic inches, for a

mean array size of 5600 cubic inches. Since the different sizes are not distributed normally around that mean value (i.e. not a smooth bell shaped distribution), some other value of central tendency, like the median (5100 cubic inches) might be deemed a more appropriate central value. But in any case, using 8000 cubic inch sources for all modeled surveys greatly overestimates actual use.

The source level of a compressed air array increases as the cube root of its volume, all else being equal, so a difference of 8000 and 5600 cubic inches might seem trivial. But we have seen that it is not trivial in terms of the outcome of concern; the number of animals exposed, because of the resulting expansion of the acoustic 'footprint' of the array and the number of animals likely to be found within that footprint.

Furthermore, the modeled array is not only extreme in the total volume modeled, but also in the number of elements within the array. A typical large array of 8000 cubic inches might include 48 elements and sometimes as many as 60, but the BOEM DPEIS used 72 elements. Why is this important? Because array source level may only increase trivially with total volume, but it is directly proportional to the number of elements. An array with 72 elements has double the amplitude of an array of 36 elements; volume and air pressure being equal.

Therefore the combination of using an array at the extreme upper end of normally used array sizes, coupled with a number of elements in that array which also greatly exceeds the average, can by itself produce estimates of takes that are 1.5 to over 2 times as large as would be predicted by using the normal range of array sizes and numbers of elements actually in use. Based on this variable alone one would be justified in taking the final model predictions and halving them. But there are many more conservative assumptions in the model.

Also potentially capable of altering the model outcome, but not addressed in this quick analysis, are:

- The number of source vessels. When multiple source vessels are used they are used at intervals that are similar to a single source. The total acoustic energy is therefore not increased over using a single source operated at the same inter-pulse intervals, but the total area ensonified is slightly increased, depending on the spatial separation of the vessels. This may be compensated by the fact that each vessel is only producing sound every 60 seconds instead of every 15 seconds for a single source vessel). In the BOEM DPEIS, the maximum number of source vessels, four, is used for all surveys that might use multiple sources, even though many of those surveys, such as NAZ, WAZ and coil surveys, might more often use only one or two sources, and rarely use as many as four source vessels.
- Longitudinal tracks were only used during modeling on the slope region of the Gulf, which has the potential to alter sound fields and estimated takes relative to using both lateral and longitudinal tracks typical of most surveys.
- The choice of depth at which the array was towed was set at 8 meters, but other tow depths are common (6 meters is considered the default 'standard') and the choice of tow depth affects the frequency structure and propagation of the resulting sound field.
- The choice of pulse intervals typically varies from 10 to 20 seconds, with the DPEIS selection of 15 seconds being fairly typical. A four source survey would result in each source operating at 60 second intervals.

- Durations of surveys were not clear. On page 3-23 a nominal survey duration of 10.5 months was applied to all surveys, but elsewhere in the document, e.g. D-177, the survey durations varied.
- Survey areas, line separations, and other parameters on page D-177 appear to be in the same conservative direction as the array size and element count; suggesting that line spacing and area covered by a modeled 2D, 3D, WAZ or other survey may be greater than average and thus produce elevated sound exposures and take estimates.

Sound Propagation.

BOEM is to be commended for having run some preliminary models (Phase I modeling in Appendix D) to quantify some of the consequences of using simplifying or conservative assumptions (e.g. see pages D-100; D-106; D-113; D-122). Therefore we can assign some quantities to what is otherwise a very complicated variable, the day-to-day fluctuations in wind, temperature, currents, and other factors that affect sound propagation through the water between the sound source and the animals of concern.

The modeling of sources of variance yielded a 10 decibel difference in sound transmission between an average sound speed profile in the water and the extreme case used in the model (10 decibels is an order of magnitude or ten times the average). Use of hard or median properties for the seafloor added another 4 dB over the most likely outcome, with most of the Gulf being covered with soft sediment that is a poor reflector of sound). Use of a flat sea surface instead of a rough sea surface adds another 2 dB minimum, resulting in a conservative value of over-estimated propagation of 16 decibels or 60 times (!) the amount of energy propagated than would be expected on average. Add this to the conservatism we saw for the source itself, and we already have an ensonified area and number of animals ensonified that would be 90 to 120 times the reasonably expected exposures. A “best reasonable estimate” of 100 would become an estimate of 9,000 to 12,000 from these two precautionary measures alone.

Also potentially capable of altering the model outcome, but not addressed in this quick analysis, are:

- A single uniform propagation regime is used for the entire deepwater zone (Zone 7). Assumptions of flat bottom and maximum depth are not met in all cases and propagation is therefore subject to additional over-estimation factors in the deep water region.
- Survey days and survey effort appear to have been evenly distributed across the area and seasons, although this is likely not the case for actual survey effort. Theoretically this might average out, but it is also possible that fewer actual survey days in winter, when propagation conditions are best, will lead to actual surveys producing fewer takes than the model estimated by using equal division across winter and summer.
- SPLrms for longer range propagation is derived from the SEL values produced by the model. As JASCO acknowledges (D-49), modeled SEL at range tends to over-predict SPLrms as the signal is spread over time. Time resolution of the model also hinders accurate modeling of SPLrms based on proper analytic units such as rms.90 (average sound pressure over the time than encompasses 90% of the total pulse energy).
- Single frequency long range propagation modeling leads to increased errors in pulse properties with range. For modeling purposes a single frequency at the center of each 1/3 octave band is treated as ‘representative’ of all the sound energy within that frequency band. In practice, selection of a non-representative frequency (e.g. located at a ghost notch or filtered by

propagating environment) can lead to errors in weighted SEL values needed for determining effects thresholds.

- Use of “maximum over depth” in some model estimates of take creates a worst-case scenario where all individuals are assumed to be at the depth of highest sound exposure all the time. It is not clear in what context JASCO used maximum over depth as a simplifying step in modeling, but it will always greatly over-estimate takes when used.(D-296)
- Ranges to effect for mitigation monitoring and shutdown (but not for take estimation?) were calculated from unweighted values, whereas hearing frequency weighting needs to be applied to SEL threshold values (JASCO also seems to have applied weighting to SPLrms data, which may also be inappropriate – see section on Threshold Criteria, below).

Animal Abundance, Density and Movements.

This is a complex set of variables, with precautionary assumptions literally varying for each of the species modeled. But overall, the use of the Duke model creates an increase in predicted abundance that is about double the official NMFS abundance numbers in the SARs. Some additional modifications in the use of those data by JASCO add to the conservatism (over-prediction) by a fractional amount, in most cases.

The Duke model is a novel approach to forecasting animal distribution and density from historical correlations with readily available environmental data, typically not the true environmental predictors like prey patches or features like fronts, currents and eddies that are less easy to predict or track. As such, there are some things that the Duke model likely does better than the SARs, such as predicting average abundance of pelagic dolphins that move in and out of the US EEZ from one survey to the next, leading to large sampling variability. However, other similar models for the US west coast, for the UK, and for global oceans, have shown some extreme misses in their predictions, an expected outcome for models in the early stages of development for species that are infrequently counted and whose habits are still poorly understood relative to land animals for example. Too great dependence on a single very new model like the Duke model can therefore be expected to result in some improvements on the SAR or US Navy NODES data resources, but is also likely to produce some extreme “misses”. Species with wide disparities between historical data and Duke model predictions include Atlantic spotted dolphins (from no historic estimates in SAR, to over 45,000 animals predicted by the Duke model, making them the third most abundant species in the Gulf, virtually overnight. Duke predictions of Clymene dolphin abundance are about 85 times higher than the SAR figures, Kogia numbers are increased by a factor of 12, rough-toothed dolphins by a factor of 8 and killer whales by a factor of more than 7. These are radical changes to our understanding of marine mammal abundance in the Gulf that require more than blind acceptance of a new model simply because it is generally “better” than the SARs (D-65).

Some of the animal abundance and distribution modeling may be unfamiliar and counter-intuitive to the average reader. The model in the BOEM DPEIS uses electronic representations of individual animals, or ‘animats’, to construct time series of exposure for a realistic number of animals, ‘behaving’ in realistic ways, so that the animats move about and dive at realistic speeds and distances relative to the sound source, which is also moving. As might be expected, capturing the complexities of animal behavior and all of the other variability of the sound source and the propagating ocean is impossible, so certain statistical techniques are used to smooth out some of the variability in outcome that can occur just from sampling errors alone. These techniques, such as over-populating the sound field with hundreds or

thousands of times more animats than animals (and then reducing the result proportionally to the actual population) do not affect the outcome but do reduce the likelihood of random extreme variation in outcomes. Monte Carlo methods, or running the same simulation over and over hundreds or thousands of times also helps smooth out the distribution of outcomes. Because the animats are seeded randomly for each model run and because they run independently according to user-specified rules, no single model run will produce the same result (as in real life) and so the model must be run many, many times in order to arrive at a statistical average. This process, which is widely accepted as statistically legitimate and even necessary to producing realistic model outcomes, should not be confused with the selection of variables to put into the animat models and Monte Carlo simulations: those variables, like the source and propagating environment variables, can and do produce biases in the outcome, as will be discussed in detail below.

Animal survey data for the Gulf of Mexico is sparse overall, and therefore statistically weak. Various techniques have been applied to the data to generate estimates of population abundance, density and distribution. The official NMFS Stock Assessment Reports (SAR) are an official estimate by NMFS of the best estimate of population abundance in a region, but they do not offer information about animal distribution, forcing the user to either evenly distribute the animals even across the habitat, even though it is known the animals do not use all of the habitat equally. Alternatively, the modeler can generate 'expert' assumptions about how the animals use the habitat, but those assumptions can create unrealistic estimates of take if the assumptions are not good. For example, JASCO placed all sperm whale animats in water depths greater than 1000 meters because sperm whales are deep divers that tend to occupy deep water. However, a look at the data show that many, if not most, sightings of sperm whales occur in water depths of 400-800 meters, and this is largely confirmed by tagged whale data from the BOEM SWSS research project.

Alternative to applying a population estimate for the entire Gulf evenly or selectively across the Gulf is to use habitat features correlated with animal sightings to predict where animals are most likely to be seen based on 'suitability' of habitat. The statistical aspect of this process is quite well worked out as in the Duke University model applied in the BOEM DPEIS, but there are still 'human-in-the-loop' decisions that can affect model outcome. Something like the Duke model is therefore a "work in progress" in which model predictions may be more or less accurate, depending on the habitat variables available to the modeler and whether they are in fact strongly predictive of where animals will in fact be. A few "warning flags" about the novel predictions by the Duke model are:

- The distribution of Bryde's whales across the entire GOM shelf edge by the inclusion of "unidentified baleen whale" data as Bryde's whale data. Actual observations suggest that the Bryde's whales are confined to a relatively small area of habitat around DeSoto Canyon in the Eastern Planning Area (EPA), and in fact this site has been selected as a special mitigation zone. But the Duke model "places" Bryde's whales across large swaths of area where they have never been seen, greatly elevating the predicted takes in the WPA and CPA by what are probably orders of magnitude (hundreds or even thousands of modeled takes not supported by the real data).
- Several species for which there are low sighting data produced low likelihoods of occurrence across vast areas of the Gulf in the Duke model, which were further simplified to even probabilities across entire modeling zones: false killer whales, killer whales and several other species are therefore equally likely of being taken wherever surveys occur, when in reality there

are probably higher and lower areas of likelihood. It is hard to predict how the “fuzzy” predictions of the Duke model, and the modifications of the JASCO model affect take outcomes but generally speaking, these species tend to have predicted abundances derived from Duke density models that are among the highest deviations of the Duke model from SARs (e.g. 6 times SAR for killer whale, 14 times SAR for pygmy killer whale).

- Deep divers that are seldom seen during visual surveys were subjected to some assumptions about sightability that greatly elevated predicted abundance and greatly expanded habitat occurrence over the SARs; 12 times the SAR for Kogia and about 8 times the abundance for beaked whales (based on Cuvier’s beaked whale modeling). This radical departure from historical estimates of abundance is somewhat consistent with comparisons elsewhere (Atlantic, California, Bahamas, eastern north Atlantic sites), but on the high side. It is also higher than predictions by passive acoustic surveys and modeling by Hildebrand, Moretti, and others. Just how “precautionary” the Duke model is for these species is hard to estimate at this time, but it is fairly clear that the Duke model is over-predicting deep diver abundance and distribution leading to excessive estimates of takes.

Additional aspects of animal distribution and movements information that may lead to over-prediction of takes include:

- Assumptions used to deal with the large number of modeling cells that yield zero abundance and zero takes can lead to over-prediction of takes. JASCO notes that the outcomes that yielded a probability of Level A take greater than one (1) was less than 0.2% (i.e., only 2 out of a thousand model results yielded a take of 1 or more animals)(D-123, D-129). The average number of Level A takes was 0.0195 or about 2 per 100, the result of a very small number of model outcomes that yielded more than one Level A take.
- The 3MB model used to set swimming and dive parameters for the animals rely on limited data, quite often from related species studied at different locations than the Gulf. It is therefore hard to predict whether the overall effect of the values entered into the 3MB model resulted in over-prediction of takes or under-prediction, but the most likely outcome is that the values used were conservative, precautionary values that added to the over-prediction of takes.
- The modelers assumed that the animals did not undergo long-term, large-scale movements. Certainly it is widely assumed that animals do not migrate in and out of the Gulf in great numbers, although sperm whales, a variety of baleen whales, and probably many other species do move between the Gulf and Atlantic or Caribbean. But the currently available data do not offer enough information, especially for winter months, to determine whether other species exhibit moderate north-south or east-west movements with the seasons similar to the inshore-offshore movements of estuarine bottlenose dolphins in the late winter and spring, or during other seasons. It is well known that large numbers of animals may travel from east to west, tracking the warm core rings spun off by the Loop Current, but this phenomenon is not sufficiently documented to inform the model.
- JASCO modeled the effect of group size on outcome. They did not see a significant difference in average outcome from using single, ungrouped animals, although they did note that obtaining the same outcome regardless of group size means that there will be more zero-take model runs as group size increases (D-135; D-174).

- As animats move over time, and if animats are removed once they exceed a take threshold, then the probability of take will decline over time as there are fewer and fewer animats in the field. JASCO used a common technique for keeping the number of animats constant and thus keeping probability of take constant over time by introducing new animats on the opposite side from which an animat had just left (D-49; D-82; D201). It is also not clear if and how animals were removed or replaced once taken. This is especially important where animats were left in the field to accumulate SEL for days or weeks. There are other nuance to re-seeding the sound fields that can result in skewed results, but a full treatment is beyond the scope of this short review.

Take (Acoustic Risk) Thresholds.

Both Level A and Level B thresholds range from more than 100 times higher than best scientific evidence to over 100,000 times higher. There are multiple conservative assumptions that produce this extraordinary outcome: the assumption that exposure equals take, the conservative linkage of permanent hearing decrements to temporary hearing decrements, assumptions about the accumulation of hearing effects over time without recovery between exposures, and assumptions about how many of these exposures actually have any meaningful biological consequences.

The MMPA defines “harassment” with reference to two categories: Level A harassment (potential to “injure”) and Level B harassment (potential to “disturb”). NMFS applies acoustic thresholds to estimate the amount of harassment for each category that may result from an activity. The acoustic thresholds are often mistakenly assumed to mean that an injury or mortality will occur, with 100% of the exposed animals being injured or killed, or that 100% of exposures at behavioral thresholds will cause behavioral change and that the consequences of the change are a significant and meaningful loss of food, energy, or some other key biological function. In fact, both thresholds imply a probability of there being an effect upon exposure. BOEM was quite emphatic in stating that exposure does not equal take, but the model still treats any exposure that exceeds threshold as a take. This is the first of many features within the Acoustic Risk Threshold part of the model that lead to large over-estimates of take.

Additionally, the DPEIS is not always clear when and how animals are removed from the model to prevent multiple takes of the same individual (e.g., being counted as a Level B take and then exceeding Level A criteria and also being counted as a Level A take). Removals need to be handled carefully to prevent gradual reductions of model ‘animats’ in the sound field as “taken” animats are removed.

The most recent threshold criteria for Level A takes are based on empirical data for the threshold at which a temporary decrease in hearing sensitivity (TTS) occurs across a narrow frequency range of hearing (NMFS, 2016; Finneran, 2015). BOEM also variously cites NMFS 1995; Southall et al 2007; Finneran and Jenkins, 2012: it is not yet clear which criteria they plan to use in the Final EIS, making analysis of the DPEIS difficult. JASCO in Appendix D modeled the 1995 threshold

The simplest Level A threshold, long since superseded by scientific data but still in use by NMFS, is 180 dB SPLrms (root mean squared – an average over some specified time period, and since it is an average of a logarithmic scale, dB, a square root of the mean of summed square values is required rather than a simple average). Despite being outdated by more than 20 years, BOEM still modeled takes using this hyper-precautionary threshold. This provides a threshold that is some 10 to 1,000 times more precautionary than the current best data derived from TTS thresholds for both impulse and tonal sources; the peak SPL or the summed sound energy over time (SEL), although we shall see later in this

section that the SEL has also been subjected to additional conservative assumptions that render it some 10-1,000 times more conservative than SPLpeak. The values of 10 to 1000 times are based on SPLpeak thresholds of 230-200 dB SPLpeak, and an estimate of 180 dB SPL rms being comparable to 190 dB SPL peak (200 dB is ten times 190 dB and 2230 dB is one thousand times 190 dB on the same scale, in this case SPLpeak).

Permanent Threshold Shift (PTS) is not tested directly, and is assumed to occur at a level above TTS consistent with marine mammal TTS data and human/lab animal data. PTS, as for TTS, is not a threshold for deafness or major loss of hearing, but for a small decrement of hearing sensitivity within a narrow frequency range, a 'hearing notch'. This is a liberal interpretation of "injury", since the original sense of the term in MMPA was intended for animals that lost eyes, limbs, or suffered broken bones and spinal injuries during interactions with fisheries or due to being struck by ships, shot at, or otherwise seriously injured.

The criterion is rendered even more conservative by the use of a 15 decibel difference between TTS and PTS when the data from other species, including humans, indicates PTS onset at 20-40 dB above TTS threshold. Since even this conservative addition of only 15 dB to TTS produces thresholds of PTS above the source level of the sound source, Southall et al (2007) and subsequent criteria (NMFS 2016) have arbitrarily set the SPL peak metric for PTS at a mere 6 dB above TTS threshold, or almost ten times lower (and therefore productive of ten times as many exposures and takes).

The best predictor of TTS and therefore PTS, at least for tonal sounds, is SEL, a product of both signal intensity (not amplitude) and duration. It is not clear how well this relationship holds up for an impulse signal like compressed air (CA) sources, so relationships for tonal signals are applied to impulse thresholds. SEL is referenced to a time duration, typically one second, but for sounds less than 1 second long, like impulse sounds, SEL does not always hold up.

Furthermore, models like the BOEM DPEIS treat multiple exposures separated by many seconds or even hours or days, as if the sound exposure had been continuous. Near the source a geophysical survey produced 0.1 s of sound every 10-20 seconds, expressed as a "duty cycle" of approximately 1-2%. Further from the source the energy in the impulse may spread in time, increasing the duty cycle, but at ranges meaningful for Level A determination, the duty cycle remains below 10%, meaning that 90% of the time the ear is capable of recovering from some of the induced fatigue or threshold shift. Early TTS studies noted that the animals recovered from low levels of TTS within seconds or minutes, and subsequent ongoing studies are consistent, suggesting that it make take considerably more intermittent exposures to produce TTS or PTS than would be predicted by simply adding up multiple pulses as if they all occurred in succession without any time for recovery (In other words 12 pulses of 0.1 second duration each are treated as a continuous 1.2 second pulse and not what they are, which 1.2 seconds of sound within ten 15 second intervals or 150 seconds of ambient sound only).

The case for some sort of recovery function is even stronger for intermittent passes of an array that may be separated by 4, 8, 16 or more hours, in which case hearing is likely fully recovered and no accumulation of SEL should be carried forward. NMFS has traditionally carried SEL forward for 24 hours, a scientifically unwarranted precaution that leads to over-estimations of take by another 10-100 times, if not more. The current modeling exercise suggests in places that SEL accumulation was carried forward even further for weeks or even months. Appendix K offers annual summations of SEL and a

similar cumulative sound metric, Leq, for an entire year. This is not scientifically justified and leads to overestimates of takes by tens or even hundreds of thousands of takes, both Level A and Level B.

Because we do not have a specific recovery function to offer yet, BOEM has not included ANY recovery in their model, whereas a model consistent with best available science should include at the very least a recovery function consistent with human and other mammalian hearing. Absence of a recovery function is likely adding another 10 to 100 fold over-estimation to Level A take.

Thresholds for Level B take have been difficult to derive, although more and more publications have offered data and a proposed threshold function: most of these papers are not cited or reviewed in the EIS, or in the reference used by the Phase II model (Appendix D), which is an unpublished contract report to a California utility company (Wood et al 2012). Wood et al (2012) also presents a potential conflict of interest, since the author of Appendix H (Brandon Southall) is also a co-author of the Wood et al (2012) report. The industry is sponsoring a review of the behavioral effects literature, but that review will not be published in time to inform the current PEIS.

In any case, the Wood et al recommendation was a step function of increasing behavioral response at increasing exposure levels, and in this respect Wood et al (2012) is similar to other Level B risk assessments like the US Navy Programmatic EISs (2009; 2014, draft 2017). All recognize that out of a given group of animals, a few will respond at low levels, with increasing recruitment up to an exposure level that approaches thresholds for TTS and PTS. BOEM also applied the outdated NMFS 1995 Level B threshold of 160 dB SPLrms.

The outcome of applying any of these thresholds is the generation of tens of thousands to millions of Level B takes in which the vast majority of “takes” are transitory disturbances that last hours or a day or two and have no impact at all on foraging success, breeding success, growth, health or any other biologically meaningful metric. The hypothetical possibility that cessation of feeding for a day or movement a few miles from the source, or a change in vocal behavior “might” lead to biologically meaningful consequences means that the model calculations are treated as “takes” under MMPA even though all acknowledge that exposures don’t equal takes and takes do not equal meaningful effects. The development of the PCOD model, and population of that model with data, confirm that behavioral disturbance from sound needs to be reduced to a “biologically significant” number that is a fraction of the counted exposures; anywhere from a conservative 1% to a more realistic 0.001% or less. In other words, estimates of thousand to millions of takes in the model are like to result in fewer than 1 to 1000 takes with actual biological consequences. These numbers, spread across large areas like the Gulf and multiple species are mathematically too low to result in a population level consequence from Level B takes (e.g. elevation of baseline mortality, decrease in baseline fecundity). This is consistent with history, where more than five decades of regular geophysical survey effort all over the globe has not generated any evidence that observed behavioral responses to the sound has any biological consequence.

Calculation of grossly inflated Level B take numbers in the GOM DPEIS is not consistent with current best information, and greatly over-estimates the consequences for the stocks of marine mammals being managed.

Finally, behavioral aversion was not applied to this model, even though a preliminary Phase I model showed that even small amounts of aversive greatly affected both Level A and Level B takes. If

behavioral aversion is a trigger for Level B take then it cannot subsequently be omitted from modeling of Level A takes, since the low level exposures that trigger aversion will reduce the likelihood of higher levels of exposure.

Additional aspects of threshold assessment that may lead to over-prediction of takes include:

- Conservative thresholds for low frequency whales. Current conservative thresholds for whales increase the estimated Level A and Level B takes for these species by some 4 to 10 times over best available science predictions. Arguments for unreasonable precaution in the face of uncertainty are not consistent with mammalian auditory biology in general.
- JASCO applied novel uses of weighting functions, using outdated M1 weighting functions from Southall et al (2007) on SPL thresholds, where weighting functions should not be applied.
- Kogia are considered to have the same hearing thresholds as porpoises, even though they are unrelated and the evidence for high sensitive is based largely on data about Kogia vocal behavior and some inconsistent evoked potential audiometry.
- Modifications to beaked whale Level B thresholds unique to this EIS are applied without justification other than precaution.

Mitigation.

BOEM allowed no reduction in the estimated take for mitigation. This is a highly over-conservative assumption, justified by the relatively little data available on mitigation effectiveness, together with the likely variability in mitigation effectiveness between mitigation service providers, types of marine species present, monitoring conditions and other variables. Some analysis on page D-151 suggests ranges of observer mitigation effectiveness from near zero to over 70%. One cannot require mitigation and at the same time treat it as if it provides no reduction in takes. BOEM needs to come up with some metric for the benefits from required mitigation. A variety of other possible mitigations have been proposed in the GOM DPEIS, ranging from alternative source technologies and active acoustic mitigation to time/area closures, vessel separation schemes, and reduced quantities of geophysical survey effort of 10-25%. At least two of the suggested mitigation measures, vessel separation (Table ES-1; page 1-10; page 2-10; B-32; page 2-38; and D-162-163) and shutdowns for dolphins approaching vessels or bowriding (p. 2-24) offer the possibility of actually increasing takes through expansion of ensonified areas (vessel separation), or extremely high increases in shutdowns with associated prolongation of survey effort (and sound exposure) to achieve survey completion (an estimated 35-40% increase).

ATTACHMENT B

PSO Data 2009 - March 2014: Dolphin Sightings

Provided by CGG based on MMO reports submitted to BOEM during this period representing approximately 23% of total vessel activity days in the GOM since 2009.¹

Species Identification		
% of Unidentified Dolphin	69%	In many reports, PSOs contribute sea state, distance, or the sun's glare as a key factor for not being able to identify species.
% of Identified Dolphin	31%	
PAM		
% of PAM Detections	60%	PAM detections accounted for over half of the total dolphin sightings/detection reports. However, only 3% of the acoustic detections made identified a specific dolphin species. The majority of this small percentage is due to the PSO visually confirming the acoustic detection.
Source Activity Comparison		
% of sightings and/or acoustic detections – source active	54%	The frequency of sightings and acoustic detections are proportional regardless of whether the source is active.
% of sightings and/or acoustic detections –source silent	46%	
Animal Behavior		
% of sightings when bow-riding was observed (active or silent)	12%	The data indicates source status (active or silent) had no impact on dolphin bow-riding. The number of dolphins observed when the source was silent was proportional to when the source was active.
Average Distance of Animal at Initial Sighting	560m	Average sighting distance between 500m and 800m.

PSO Data 2009 - March 2014: Turtle Sightings

Provided by CGG based on MMO reports submitted to BOEM during this period representing approximately 23% of total vessel activity days in the GOM since 2009.²

Total Sightings	335	335 sea turtles were observed overall.
Average Distance of Animal at Initial Sighting	42m	Analysis of turtle sightings indicates observations are typically within 100m.

¹ Estimated calculation based on level of activity from January 2009 to March 2014 from IHS SeismicBase Vessel Search Database.

² *Id.*

ATTACHMENT C

Targeted Detailed Comments — IAGC/API/NOIA/OOC

No.	Page	DPEIS Language	Comment/Question
1	1-9	This Programmatic EIS is being prepared to serve as the programmatic NEPA analysis from which BOEM will tier its site-specific NEPA analysis for BOEM to permit and authorize G&G activities under the OCSLA.	This indicates that site-specific EA's will be required for G&G activities. The industry would appreciate greater clarity on what the future permit application and supporting NEPA process will look like for individual applicants.
2	1-15	Exposure Versus Take BOEM and NMFS do not believe that every exposure to sound results in a "take". ... And/or, in extreme cases, habitat avoidance or even death.	Saying habitat avoidance is an extreme case and including it alongside "death" is not appropriate and misleading. Neither long-term nor permanent habitat avoidance has been observed in conjunction with seismic surveys. No mortalities have ever been confirmed, despite extensive effort to detect such effects. It is unreasonable and not consistent with best available information to infer these effects are possible just because they are imaginable. Contrast with sonar sound, in which association with strandings and mortalities are well-documented. Just because one sound source might have an effect does not mean that other very different sources, used in very different contexts, might have the same effect, especially when the sources in question have been in widespread use for over 50 years.
3	1-16	Significant strides have been made in quantifying the effects of noise on marine mammals (cites Atlantic final PEIS)	Using the Atlantic G&G PEIS as a reference for showing that significant strides have been made in quantifying the effects of noise on marine mammals is not useful or appropriate. That document used a similar approach to estimated exposures as used in this DPEIS for the GOM, but there are no data to indicate how accurate these methods are in representing actual exposures or impacts from the modeled activities.
4	1-16	The efficacy of the proposed mitigation finally selected for implementation as part of the Record of Decision will be examined under the Adaptive Monitoring Plan discussed in Chapter 1.2.3 above.	Text in the Adaptive Monitoring Plan section of Chapter 1.2.3 does not include any materials that address the efficacy of proposed mitigation measures.
5	2-33	Therefore, depending on whether or not a collision did occur, nominal to moderate impacts are expected for Alternatives A-F	The potential for a single mortality from a vessel strike causing a jump from nominal to moderate impact is inconsistent with arguments made on the previous pages that changes in impacts to a single species/stock are insufficient to warrant a change in

			the significance level when considering all species across 10 years.
6	2-35	Impact to MPAs... from active acoustic sound sources range from nominal to moderate for all alternatives except Alternative G	Why would impacts reach the level of moderate for Marine Mammals inside MPAs when MPAs represent a pretty small area inside the AOI? Some might argue that MPAs contain unusual densities of species of concern or contain critical habitat, but neither of these assertions are supported by the best available data (e.g. Duke density maps or what data we have from tags and surveys concerning breeding, foraging and other vital activities).
6a	3-18 and D-25	8000 cubic inch array with 72 elements used as standard	Actual distribution of array sizes ranges from 8400- less than 2000 with a mean value of 5600 cubic inches. Assuming the use of an 8000 cubic inch array overestimates reasonably expected source energy for a typical year or decade of effort. Additionally, using an excessively high number of elements in the array (the PEIS assumes the 8,000 cubic inch array is composed of 72 elements, when it would more likely be composed of 48 to 60 elements) further overestimates the expected source amplitude.
9	4-54	Fitness level Consequences of level A and Leve B Exposures	The analysis of fitness level consequences in this section involves comparing the number of total animals in a hypothetical 7,000 km ² survey area to the number animals that would be within the acoustic threshold distance at any one time. This seems to have been done to compensate for the fact that exposure modeling was conducted for a 24hr period and discusses the probability of an animal experiencing multiple exposures to Level A acoustic energy, but the logic behind this approach is not at all clear. This should be more fully explained.
10	4-56	There is still a very small potential for an animal to be in the acoustic footprint, thus an even smaller probability of experiencing multiple exposure to Level A acoustic energy. It is not anticipated that any animal would experience fitness-level impact from level A exposures.	The argument made here that seems to be predicated on fitness level consequences coming from multiple exposures of the same individual above Level A criteria is not clear. There is not support for the final sentence and there is not an initial logical argument made for how multiple exposures and not a single exposure would lead to fitness level consequences or why the traditional density x area calculation was used for this assessment rather than the results of exposure modeling.
11	4-57	Minimum survey spacing will ensure that marine mammals will have areas where sound levels will not meet the threshold of harassment...	No support for this is provided in the document and, to our knowledge, none exists in the scientific literature.
12	4-124	"In March 2015, NMFS published a proposed rule to	The final rule was published April 6, 2016 (81 FR 20058). The North Atlantic DPS is listed as

		remove the current range-wide listing for green sea turtles and to replace it with eight DPSs as threatened and three as endangered. Green sea turtles found in the GOM are part of the threatened North Atlantic DPS (80 FR 15272). The NMFS is currently compiling comments on the proposed rule, with a final rule expected to be published in late 2016."	threatened. Critical habitat is not determinable at this time but will be proposed in a future rulemaking.
13	D-25	For geotechnical source propagation modeling, a fixed +10 dB factor was used to convert SEL to rms SPL.	Although a 10 dB adjustment is common, there is insufficient detail provided here to support that it is appropriate for the HRG sources. This is especially true at greater ranges where the impulse shape of the signal is changed to an amplitude modulated signal over a variable time window.
14	D-35	Exposure estimates for cSEL metric were based on the exposure history of the animats (this is appropriate). Exposure estimates for peak SPL were based simply on the how many animats came within the range of the threshold	Using only the range value would appear to neglect the depth of the animat at the time it was within the (assumed maximum-over-depth) range. If slant range and 3D peak SPL sound field were used, this should be specified.
14a	D-42	Max value in the downward direction is used to estimate exposure	AASM generates a vector-specific level at any angle and in fact downward energy does not make a substantial reflective or refractive contribution to the longer range propagated signal, so this use of the downward maximum overestimates exposure.
15	D-44 D-45	red boxes in Figures 13 and 14 within which densities are calculated from the NODES database	These boxes do not appear to show the same geospatial shift as shown for the two survey areas in Figure 10.
17	D-49	Animats coming within the 230 dB (18.7 m) and 200 dB (575.4 m) isopleths were counted as exposed	Not enough detail is provided, but if the ranges to animats used were simply horizontal distance rather than slant-ranges, then this calculation assumes maximum over-depth, which would result in more exposures of deep-diving marine mammals than is realistic.
18	D-84	Sound Speed Profile Analysis Results.	There is insufficient description of how the Median and standard deviation values shown in Table 30 were calculated to interpret the results. Presenting differences between worst-case and median models in terms of dB at a maximum distance to a threshold is not as useful as showing actual variation in distances to that threshold or areas exposed above the threshold. Table 30 shows that the median difference between

			“worst-case” and “median” SSPs in the Shelf Zone result in +0–15 dB at/near the 160 dB range. +15 dB SPL would be a very large distance and therefore difference between median and worst case results.
19	D-99	Sea State. propagation in sound speed profiles that cause surface sound channels can be quite strongly affected, as sound can be scattered out of the duct.	No actual analysis was performed to assess the variability in model results caused by increasing sea state. All modeling assumes perfect reflectance; however, this statement makes it clear that the long-distance estimates resulting from the presence of sound channels in unrealistic in high sea states, and perhaps moderate, however, no effort is made to quantify this. This should have been quantified and/or a moderate (median) sea state used in all modeling scenarios.
	D-174	Neither mitigation nor aversion are used to adjust take estimates	The DPEIS builds a strong case that some sort of mitigation reduction or aversion effect should be incorporated and would make a considerable difference in the take estimates, but neither well-established phenomenon is taken into account.
	D-162	Stand-off distances	The JASCO Phase I model clearly shows that separation schemes and ‘corridors’ are most likely not meaningful or used by the animals, and that the effect of such schemes is more likely to increase exposure, especially Level B SEL. We are hopeful that this proposed added mitigation will therefore be removed from consideration.
	K-32	Hypothetical treatment of “lost communication space”	This is a novel and poorly supported idea within the research community and is not well enough developed or supported by data to be treated as a meaningful regulatory concept.
	K-7	Introduction of L_{eq} metric in addition to SEL and SPL	No formula or rationale for use of L_{eq} is provided. L_{eq} is not used in the rest of the PEIS. Introduction of a new, unjustified metric is not warranted.
	K-18	Introduction of the concept of “listening space” and a simplistic approximation of biological de-masking is unwarranted.	This is a novel and scientifically controversial idea; it is not mature enough for regulatory application. A DPEIS is not the place to introduce a radically different concept for UW sound regulation: this should be further developed and vetted as a policy or regulatory rule-making on its own before it is considered solid enough for regulatory application.
	K-22	Introduction of a novel metric, cumulative SEL and L_{eq} for an entire year.	This is not an accepted ISO or ANSI standard, and for good reason. Concepts of hearing recovery, effective quiet and other basic hearing phenomenon would need to be considered and are not, leading to absurd expressions of acoustic energy “accumulation” that are biologically impossible and biologically meaningless even if possible.

ATTACHMENT D



Via Electronic Mail

May 2, 2014

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Subject: Comments of the American Petroleum Institute, the International Association of Geophysical Contractors, and the National Ocean Industries Association on NOAA Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys*

Mr. Baker,

This letter provides the comments of the American Petroleum Institute (“API”), the International Association of Geophysical Contractors (“IAGC”), and the National Ocean Industries Association (“NOIA”) (collectively, the “Associations”) on the National Oceanic and Atmospheric Administration (“NOAA”) Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys* (“Observer Standards”). We appreciate your consideration of the comments set forth below.

API is a national trade association representing over 600 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers. API is a longstanding supporter of the Marine Mammal Protection Act (“MMPA”) regulatory process as an effective means of balancing and rationalizing responsible oil and gas activities with the conservation of marine mammals. We continue to support issuance of incidental take authorizations under the MMPA because, for example, it has been demonstrably effective in the Arctic in protecting marine mammal species without unduly and unnecessarily burdening industry.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

NOIA is the only national trade association representing all segments of the offshore industry with an interest in the exploration and production of both traditional and renewable energy resources on the U.S. Outer Continental Shelf (“OCS”). The NOIA membership comprises more than 275 companies engaged in a variety of business activities, including production, drilling, engineering, marine and air transport, offshore construction, equipment manufacture and supply, telecommunications, finance and insurance, and renewable energy.

General Comments

The Associations commend NOAA’s National Marine Fisheries Service (“NMFS”), together with the Bureau of Ocean Energy Management (“BOEM”) and the Bureau of Safety and Environmental Enforcement (“BSEE”), (collectively “the agencies”) for providing recommendations for a Protected Species Observer and Data Management Program (“PSO program”). We understand that a technical memorandum is used for timely documentation and communication of preliminary results, interim reports, or more localized or special purpose information that may not have received formal outside peer reviews or detailed editing and that there is not a formal comment process. It is evident, however, that the agencies intend the recommendations in this technical memorandum to be immediately implemented for G&G surveys in the US OCS, and have incorporated the Observer Standards in the Atlantic OCS Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Areas Final Programmatic Environmental Impact Statement (“Atlantic PEIS”). The Atlantic PEIS “Seismic Airgun Survey Protocol” requires that protected species observers complete a PSO training program “in accordance with the recommendations described in [the Observer Standards].”

In general, we are supportive of a process to standardize PSO eligibility requirements, training courses, data collection and reporting requirements. After carefully reviewing the Observer Standards, however, we have identified a number of concerns and opportunities for improvement, which are briefly summarized below and described in more detail in the following sections of this letter. Although we appreciate the agencies’ attempt to clarify and standardize observer guidelines and requirements, it is imperative that the agencies consider public input on the Observer Standards and make the revisions necessary to ensure that the standards are workable, accurate, and appropriate. The standards should encourage adaptive technology, such as remote visual and acoustic monitoring and infrared technology, reduction of health and safety risks, and also the use of an updated reporting form that would be able to provide substantive data from observations to substantiate the implementation of appropriate mitigation measures.

The Associations' comments are intended to be constructive and further the goal of improving the PSO Program for G&G surveys consistent with the best available science and technology, clearly written, transparently implemented, and fully informed by the public.

Role of the US Fish and Wildlife Service

With jurisdiction over several marine mammals, the US Fish and Wildlife Service (USFWS) is an important stakeholder to the PSO process; however, it does not appear that USFWS was a part of the Protected Species Working Group or that USFWS provided any input into the development of the Observer Standards. While the Observer Standards provide recommendations of report requirements for PSO sightings of polar bear and walrus (*see* p.31), the Observer Standards specifically exclude these species and all other species under USFWS jurisdiction from the purview of the standards (*see* p.v). A comprehensive national PSO program necessitates the review and input of the USFWS in addition to NMFS.

Establishment of a PSO Standardized Training Program

The Associations generally support the establishment of a standardized training program for PSOs and are interested in working with the agencies to ensure that appropriate standards are set for the "approved" vendors. We are concerned, however, that some of the recommendations for the program are based on unsupported assertions that current PSO training and reporting is inconsistent. The agencies should provide context to these assertions so that stakeholders can better understand the improvement the recommendations seek to achieve.

The Observer Standards recommend that any standardized training program should not only provide training in mitigation and monitoring requirements, but also provide health and safety considerations. The Associations agree. All PSOs should be trained to ensure complete compliance with all applicable safety procedures. A standardized training program should cover knowledge of the heightened risks working offshore on a vessel in remote locations with no or limited shore side infrastructure, and should teach personnel how to minimize risks. Training should also include information on safe travel, logistics, onboard medical infrastructure, and security including International Ship and Port Facility Security (ISPS) information.

As the Observer Standards acknowledge, many geophysical companies will also have specific requirements related to health and safety risks associated with their operations. The PSO is required to adhere to those requirements as well as any PSO provider or agency requirements. The Observer Standards should note, and any PSO training program should advise, that industry standards often exceed those of the federal agencies. Most oil and gas companies and geophysical companies require contractors to provide evidence of safety programs and requirements that meet those defined through company management systems. This should be acknowledged in any discussion of health and safety, and the agencies should also clarify whether the program intends to include medical and helicopter underwater egress training (HUET) typically required of PSOs by the industry.

The Observer Standards recommend that as part of "health and safety training," a vessel owner should "allow a PSO to briefly walk through the vessel to ensure no hazardous conditions exist

according to a safety checklist, and to visually examine any safety item, upon request.” PSOs are not, however, safety professionals qualified to conduct safety walkthroughs or inspections on every vessel to which they are assigned. The agencies should provide additional information on what information will be included on the safety checklist to clarify what the PSO would be looking for during this initial walkthrough to prevent misunderstandings and unnecessary effort.

The Associations suggest that a standardized training program for PSOs should include a course in effective communications. It is vital that PSOs establish direct communications with the instrument room on a seismic vessel to prevent problems and delays in the event of sightings that trigger shutdown requirements and to ensure the visual observation timeframes are adhered to before ramp up and after shutdown. All parties must work effectively together to ensure compliance: PSO, Seismic Technicians, Vessel Captain, and crew.

In addition, as the use of Passive Acoustic Monitoring (“PAM”) to identify marine mammals increases in geophysical operations, the PSO Program should also include a course specific to PAM operations. PAM is a highly specialized skill and it is not appropriate to expect PSOs to possess those skills. If PAM is included in the program, training should also include rigging, mobilization and demobilization of equipment.

Finally, while the Observer Standards provide opportunity for PSO candidates who do not successfully pass an approved training course to reapply, there should be a limit on the number of times a potential PSO candidate can reapply for training.

Recommendations for BOEM/BSEE

The Observer Standards provide a list of recommendations for BOEM and BSEE to satisfy the objectives of the national standards. The Associations respectfully request that as BOEM and BSEE act on these recommendations, they solicit input from industry stakeholders and consider the following comments.

The Observer Standards recommend that BOEM and BSEE “develop permits or agreements detailing expectations and data collection and reporting of third-party PSO provider companies, including performance standards, conflicts of interest, and standards of conduct.” The Associations respectfully request the agencies provide additional information and opportunity for stakeholder input regarding any proposed permitting program for PSO provider companies, including the requirements, process times, reporting requirements, and any penalties for alleged permit violations. Without well-defined boundaries, an open-ended PSO provider permitting program will provide little utility.

In addition, the Observer Standards recommend that BOEM and BSEE “develop a mechanism, procedure, or regulation to ensure that selected PSO providers are being compensated prior to deployment of approved observers.” The Observer Standards do not, however, provide sufficient explanation of the need for PSO provider compensation prior to deployment of observers. More information would need to be provided to support the development of any requirement for prior compensation.

Development of Permit Fees

The Observer Standards recommend that BOEM and BSEE “consider assessing permit fees to financially support the PSO program needed for industry activities.” It is unclear how the agencies would determine the amount of the fees or how the fees would be assessed. The Associations recommend that all monies generated from any such permit fees be developed solely for, and directly benefit, the PSO program and not be used for any other, non-related federal activities. Because other industries conduct similar activities requiring PSOs, the agencies should also ensure that any permitting fees are equitable to supporting the PSO program.

Recommended PSO Eligibility Requirements

In addition to a national PSO training course and PSO eligibility standards, the Observer Standards recommend the development of a policy for national PSO qualifications and eligibility. The difference between these two objectives is not immediately apparent. Qualifications, including education and competency, should be satisfied with completion of the training program. An additional policy on qualifications and eligibility is unnecessary and the Associations are concerned that limiting qualified PSO candidates to those who possess a science degree would result in a shortage of personnel.

In the recommended PSO training and provider services model, *NMFS-Approved Private Sector PSO Trainers and PSO Providers*, the Observer Standards explain that “PSO providers and PSO eligibility requirements would be defined by NMFS.” While the Associations agree that the recommended mechanism for PSO training would provide more flexibility and less concern of the availability of PSO staff than the other mechanisms analyzed (*see p.10*), the agencies should clarify that NMFS’ definition of PSO providers would only entail identification of those providers that meet eligibility requirements.

In the recommended waiver of education and experience requirements for PSOs, PSO candidates can provide proof of previous work experience as a PSO overseas. Some additional detail or information should be required for eligibility based on overseas work as programs and processes in other countries can vary substantially from what is expected/required for US programs. The Observer Standards also provide that the approving federal agency official has the sole discretion to waive eligibility requirements on a case-by-case basis after reviewing a waiver request and written justification. The Associations are concerned that the agency can waive “some or all of the education/experience requirements on a case-by-case basis if a lack of qualified PSOs is demonstrated.” It would not be in the best interests of the regulators or the geophysical industry to employ PSOs who lack some critical or all necessary qualifications or experience. The Associations respectfully request that the waiver request, supporting justification and agency decision be made available to the PSO provider to ensure that a complete record of a PSO’s experience is on file should issues arise.

The Associations agree that PSO candidates should also be in good health and have no physical impairments that would prevent them from performing their assigned tasks. The agencies should

clarify, however, whether documentation or medical certification would be required similar to the *National Minimum Eligibility Standards for Marine Fisheries Observers*.

PSO Demand & Cost Estimates

The Observer Standards estimate that currently 30 PSOs are needed on a daily basis for G&G surveys in the Gulf of Mexico, with an average of 15 PSOs at sea on any given day. Based on 2009 data in the GOM, the total estimated annual costs are \$2,116,547. BOEM and BSEE indicate, however, that future demand for PSOs is likely to “significantly increase over the next 5 years, and many G&G surveys are expected to occur in federal water of the Atlantic EEZ.” Accordingly, the Observer Standards severely underestimate the costs and level of PSO demand. Assuming daily rates of \$700.00 for each PSO, a reasonable estimate of 30 PSOs would cost \$21,000 per day or \$3.8M for 6 months. Travel, reporting, and health insurance would likely entail additional costs. The Associations request that the agencies update the cost and level of demand estimates with more recent data.

In addition, the Observer Standards estimate the training for each PSO in the Gulf of Mexico to cost \$3,000.00. The agencies should provide a description of the various training costs detailed in this estimate, as described in Table 3, recognizing the uncertainties/unknowns associated with each estimate. For example, the estimated costs of safety training and medical examination appear lower than the industry standard.

PSO Evaluation During Permit/Authorization Approval

The Observer Standards specify that the recommended time to evaluate PSO coverage required for all G&G projects is during BOEM’s permit application review or when applications for incidental take authorizations are submitted to NMFS. When weighing factors to determine the number of PSOs required for each survey, in addition to vessel size, the agencies should consider the number of bunks available on board the survey vessel.

Once the number of required PSOs is determined, the agencies assert that a single entity responsible for scheduling and deploying PSOs would result in “a greater level of consistency in many aspects of the PSO program...including maintaining an appropriate number of PSOs to meet scheduling and deployment needs.” The Associations are concerned, however, that the selection of a single entity, whether a third-party provider or federal agency, to meet PSO scheduling demand would be inefficient and would result in a strain on the ability to timely contract with and obtain the number of PSOs required for each geophysical survey.

In addition, the Associations are concerned that requiring a senior-level (or lead) PSO who has specific experience observing protected species in the proposed survey geographic area will drastically limit the number of available senior-level PSOs, potentially resulting in unnecessary project delays.

During monitoring, the Observer Standards recommend that in order to reduce bias, observation periods should be limited to “favorable viewing conditions.” It is unclear what is meant by unfavorable viewing conditions. During periods of “low visibility” PAM is currently required in

water depths greater than 100 meters (328 feet) in the Gulf of Mexico. The agencies should be careful not to define unfavorable conditions as anything different than low visibility or nighttime to ensure there is no gap in monitoring coverage.

Conflicts of Interest

Throughout the Observer Standards, the agencies reference “inherent conflicts of interests” between PSO providers and industry, allegedly influencing accurate reporting of data. There are several unsupported assertions of inappropriate influence and pressure by industry. These assertions are unsubstantiated, and in the absence of supporting statements or examples provided by the agencies, should be deleted. If a statement denying conflict of interest is required from the PSOs prior to deployment as recommended, the statement should also include language to the effect that the PSO will conduct all their activities and report all data in full compliance with all applicable laws and regulations.

The Observer Standards defines “a direct financial interest” as payment or compensation received directly from the owner of the seismic survey’s vessel, the G&G surveying company, or associated shore-based facility. The definition should also include any entity or leaseholder who employs or contracts with the survey company.

Standardized Data Collection

The Associations agree with and reaffirm the recommendation of the agencies to implement “standardization including data collection methods, standardized electronic forms, and software used in collaboration with NMFS and non-federal stakeholders.” Collaboration with NMFS should result in a form that produces data the agency can use and rely on to assess population numbers, stock assessments, and effects on marine species. The Associations note that Industry best practices already recommend the use of a standard reporting form, *the Marine Mammal Recording Form*, developed under a project funded by the Exploration and Production (E&P) Sound and Marine Life Joint Industry Programme.¹ The Associations would be interesting in working with the agencies to update current reporting forms to enable the reporting of substantive data from observations that could substantiate the implementation of appropriate mitigation measures.

Creation of PSO Database

The Associations support the creation and maintenance of a database to manage PSO data for geological and geophysical surveys. This information is already supplied to NMFS and BSEE, but it would be useful for interested stakeholders to have full and timely access to such a database as a means to assess PSO activities and monitor their effectiveness.

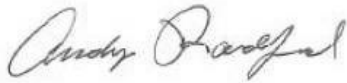
¹ See Barton, Carolyn J.S., Jaques, Robert, and Mason, Mike. 2008. Identification of Potential Utility of Collation of Existing Marine Mammal Observer Data. RSK Environmental Ltd., Cheshire, UK. The Marine Mammal Recording Form can be accessed at: <http://www.iagc.org/files/3193/>.

Conclusion

We appreciate the effort that the agencies have devoted to the development of PSO and data management programs for geological and geophysical surveys. We support this effort generally but, as detailed above, we have a number of concerns about the implementation of the recommendations. We respectfully request that the agencies engage with stakeholders prior to taking action on many of the recommendations, including the development of a PSO provider permit program, and system for permitting fees. We also encourage the agencies to pursue a program that encourages technology and remote monitoring, reducing health and safety risks. In addition, any program established should provide opportunity for feedback not only from PSOs, but also industry stakeholders. The Associations look forward to working with the agencies towards implementation of a PSO Program for geophysical surveys that is consistent with the best available science and technology, clearly written, transparently implemented, and fully informed by interested stakeholders.

Should you have any questions, please contact the undersigned at 202.682.8584, or via e-mail at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



Andy Radford
American Petroleum Institute



Karen St. John
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cc: Deborah Epperson, BSEE Environmental Enforcement Division
Gregg Gitschlag, NMFS Southeast Fisheries Science Center
Howard Goldstein, NMFS Office of Protected Resources

Jill Lewandowski, BOEM Environmental Assessment Division
Kimberly Skrupky, BOEM Environmental Assessment Division
Brad Smith, NMFS Alaska Region Office
Teresa Turk, NMFS Office of Science and Technology

ATTACHMENT E



March 13, 2014

VIA Federal eRulemaking Portal

Chief, Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

Re: Comments on Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammals - **NOAA-NMFS-2013-0177**

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute (“API”), the International Association of Geophysical Contractors (“IAGC”), the National Ocean Industries Association (“NOIA”), and the Alaska Oil and Gas Association (“AOGA”) (collectively, the “Associations”) in response to the National Marine Fisheries Service’s (“NMFS”) Notice and Request for Comments on its Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammals (“Draft Guidance”). *See* 78 Fed. Reg. 78,822 (Dec. 27, 2013). We appreciate NMFS’s consideration of the comments set forth below.

I. INTRODUCTION

A. The Associations

API is a national trade association representing over 500 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers. API is a longstanding supporter of the Marine Mammal Protection Act’s (“MMPA”) regulatory process as an effective means of balancing and rationalizing responsible oil and gas activities with the conservation of marine mammals.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful

exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

NOIA is the only national trade association representing all segments of the offshore industry with an interest in the exploration and production of both traditional and renewable energy resources on the U.S. Outer Continental Shelf (“OCS”). The NOIA membership comprises more than 275 companies engaged in a variety of business activities, including production, drilling, engineering, marine and air transport, offshore construction, equipment manufacture and supply, telecommunications, finance and insurance, and renewable energy.

AOGA is a non-profit trade association located in Anchorage, Alaska. AOGA’s 15 member companies account for the majority of oil and gas exploration, development, production, transportation, refining, and marketing activities in Alaska. AOGA’s members are the principal oil and gas industry stakeholders that operate within the range of marine mammals in Alaskan waters and in the adjacent waters of the OCS. AOGA and its members are longstanding supporters of wildlife conservation, management, and research in the Arctic, and also support the continued issuance of incidental take authorizations in the Arctic. AOGA has for many years successfully petitioned for, and defended in court, incidental take regulations applicable to offshore oil and gas activities.

B. General Comments

The Associations want to acknowledge the significant effort involved in examining the scientific literature available on the topic of marine sound and its potential impacts on marine mammals. We recognize that this topic is complex and informed by an evolving base of scientific knowledge, and we appreciate the challenges associated with translating the available information into clear criteria. In this light, we support the goal of updating and developing acoustic criteria that are informed by, and consistent with, the best available science. We also support a continued effort in furtherance of this goal that is transparent and does not result in unnecessary or unsupported new processes for the regulated community. We have carefully reviewed and analyzed the Draft Guidance and have a number of specific comments, as detailed in the following sections of this letter, in which we identify opportunities for improvement, request clarity on technical issues, and address legal concerns. Our general comments are summarized as follows.

1. In certain respects, the Draft Guidance either does not consider all of the best available science or presents other scientific, technical, implementation, or operational concerns. These concerns are addressed in detail in Sections III.A and III.B below and in the Appendix that accompanies this letter. Given the scope of our comments, and the need for more information and analyses to facilitate a sufficiently informed process, we request that NMFS issue a second version of the Draft Guidance jointly with a draft implementation guide for public review and comment.

2. The Draft Guidance does not provide a full explanation of the anticipated impact of the proposed acoustic criteria on the regulated community, and there is no clear discussion of the regulatory implications of the proposed changes. Because the Guidance will be applied in a range of regulatory actions, we recommend that NMFS undertake a study comparing the assessment approach described in the Draft Guidance with the current assessment methods to demonstrate the regulatory implications of the proposed criteria. The results of this study should be presented in the second version of the Draft Guidance that is made available for public review and comment. Although the Draft Guidance's proposed metrics are not directly comparable to current assessment methods, we believe the results of such a study would be very informative to the regulated community.

3. The Draft Guidance presents uncertainty and potential complications regarding the implementation of the proposed criteria. The complexity of the methods proposed in the Draft Guidance will result in increased time and expenses for applicants, and may lead to confusion in both the regulated community and the general public. In addition, the Draft Guidance does not address a significant category of Level B take (i.e., behavioral modification). We request that NMFS provide a more detailed description of how the proposed acoustic criteria will be implemented generally (e.g., how and when it will be formally adopted and applied in the incidental take authorization process) and specifically (e.g., how it will translate into operational mitigation and monitoring measures for project applicants).

4. We commend NMFS for its commitment to undertake review and revision of this guidance every three to five years to incorporate knowledge as it is acquired. We also welcome the opportunity for applicants to propose alternative approaches to those presented in the Draft Guidance. This flexibility will enable innovation within the bounds of regulatory compliance. There are many ways to estimate potential exposures of marine mammals to various sound levels, and future applicants should not be limited to estimating exposures using the criteria set forth in the Draft Guidance if there are other methods that are more appropriate and scientifically justified. The Draft Guidance should emphasize the agency's discretion to assess and approve approaches that differ from those described in the Draft Guidance.

5. In the Draft Guidance, NMFS has developed criteria based on extrapolations from limited data sets. We do not believe that the methods used in parts of the Draft Guidance to obtain conservative criteria are always reflective of, or consistent with, the best available science. Accordingly, we recommend that the next version of the Draft Guidance address and explain the potential shortcomings associated with extrapolation from limited data and, where appropriate (as identified in the comments below), utilize other data that, although also limited, may more accurately reflect the best available science.

6. Marine mammal incidental take authorizations for the oil and gas industry have, for many years, been authorized by NMFS and the U.S. Fish and Wildlife Service ("FWS"). The best available science demonstrates that these authorizations have resulted in no detectable adverse impacts to marine mammal populations. Although we support NMFS's development of

new criteria that are consistent with the best available science, these new criteria should not be applied in a manner that results in increased regulatory burdens. The Associations are concerned that the Draft Guidance will unnecessarily result in an increased burden to the applicant during the permitting process. In addition, if the new criteria results in an increased number of shutdowns, or longer survey duration, not only will there be increased costs, but the safety risks for the activity will also increase.

II. STATUTORY CONTEXT

The Draft Guidance is primarily relevant to federal authorizations made pursuant to the Outer Continental Shelf Lands Act (“OCSLA”), the MMPA, and the Endangered Species Act (“ESA”). To add context for our comments, this section provides a short summary of the key provisions and requirements of the OCSLA, MMPA, and ESA.

A. OCSLA

The OCS is a significant source of oil and gas for the nation’s energy supply. In 2012, offshore areas of the United States supplied over 12 percent of the country’s natural gas and oil production, and are estimated to contain roughly 23 percent of the oil and 12 percent of the natural gas resources in remaining undiscovered fields in the United States. The important role of oil and gas exploration and development in the OCS is clearly reflected in OCSLA and its implementing regulations. Under those authorities, implementing agencies are mandated to preserve, protect, and develop oil and natural gas resources in the OCS in a manner that is consistent with the need to (i) make such resources available to meet the Nation’s energy requirements as rapidly as possible, and (ii) balance orderly energy development with protection of human, marine, and coastal environments. *See* 43 U.S.C. §§ 1332(3)-(5), 1346, 1348; 30 C.F.R. §§ 250.101, 250.107.

Geophysical surveys using seismic reflection are an essential, state-of-the-art component of oil and gas exploration in the OCS. Geophysical data are used by both industry and federal agencies to make informed economic and regulatory decisions regarding potential accumulations of oil and natural gas. As one of the earliest components of the lengthy process leading from leasing of lands, to exploration, to development and production of hydrocarbon resources, seismic surveys are critical to the OCS resource development mandated by Congress in OCSLA and have been demonstrated to have no detectable long-term impacts on the marine environment.

B. MMPA and ESA

Section 101(a)(5)(A) of the MMPA empowers NMFS (and FWS) to authorize the incidental take of marine mammals, subject to certain requirements. These authorizations occur in two forms: (i) incidental harassment authorizations (“IHAs”), which are issued for a period of no more than one year; and (ii) incidental take regulations (“ITRs”), which are effective for a period of up to five years and pursuant to which incidental take from a single activity is

authorized with a letter of authorization (“LOA”). 50 C.F.R. §§ 216.105, 216.106. When issuing ITRs and IHAs, NMFS must find, among other things, that the authorization will (i) have a negligible impact on marine mammal stocks; (ii) not have an unmitigable adverse impact on subsistence needs for marine animals; and (iii) minimize effects through implementation of appropriate mitigation. *See* 16 U.S.C. § 1371(a)(5)(D).

In addition, federal “agency actions” that are likely to adversely affect an ESA-listed species or its critical habitat are subject to consultation under Section 7 of the ESA, in which the consulting agency (NMFS or FWS) issues a biological opinion as to whether the action is likely to jeopardize the continued existence of the listed species or to destroy or adversely modify its critical habitat. 16 U.S.C. § 1536(a)(2). Section 7 consultation may result in the issuance of an incidental take statement (“ITS”) that includes “reasonable and prudent measures” to minimize the effects of the proposed action. *Id.* § 1536(b)(3)(A), (b)(4)(C). For MMPA incidental take authorizations that involve ESA-listed species, NMFS (or FWS) typically issues a biological opinion containing an ITS and reasonable and prudent measures applicable to the activity that may cause incidental take.

Congress has mandated that decisions made under both the MMPA and the ESA must be based on the best scientific information available. *Id.* §§ 1373(a), 1536(a)(2). The U.S. Supreme Court has explained that Congress intended this requirement to both (i) serve the goal of species preservation and (ii) prevent unnecessary economic impacts caused by the precautionary application of incomplete or speculative information. *See Bennett v. Spear*, 520 U.S. 154, 176-77 (1997).¹

III. DETAILED COMMENTS

A. NMFS Should Provide More Clarity and Explanation Regarding the Implementation of the Proposed Criteria

¹ The National Marine Sanctuaries Act (“NMSA”) requires federal agencies whose actions are likely to destroy, cause the loss of, or injure a sanctuary resource to consult with the Office of National Marine Sanctuaries (“ONMS”) before taking any action. *See* 16 U.S.C. § 1434(d)(1). The term “injure” is defined as to “change adversely, either in the short or long term, a chemical, biological or physical attribute of, or the viability of.” 15 C.F.R. § 922.3. Through the sanctuary consultation process, ONMS may recommend reasonable and prudent alternatives to protect sanctuary resources, as well as monitoring. *See* 16 U.S.C. § 1434(d)(2). The Draft Guidance does not address whether NMFS will apply the acoustic criteria any differently in the NMSA context (compared to the MMPA and ESA contexts). If NMFS plans to apply the acoustic criteria differently in the NMSA context, it should provide an explanation for the public’s consideration and comment.

The Draft Guidance should provide an explanation of the anticipated impact of the proposed acoustic criteria on the regulated community and a clear discussion of the regulatory implications of the proposed changes. In addition, to eliminate uncertainty and potential future complications, it would be helpful if the Draft Guidance contained a specific analysis of how the implementation of the proposed criteria will affect existing offshore activities, monitoring protocols, estimated incidental take assessment, and the development of mitigation measures.² These explanations and clarifications would increase transparency, allow for more informed public review and comment, and help to “ensur[e] and maximiz[e] the quality, objectivity, utility, and integrity” of the information provided in the Draft Guidance, as required by the Information Quality Act. *See* Pub. Law No. 106-554, § 515 (2000); *see also* 67 Fed. Reg. at 8,456 (“The more important benefit of transparency is that the public will be able to assess how much an agency’s analytic result hinges on the specific analytic choices made by the agency. Concreteness about analytic choices allows, for example, the implications of alternative technical choices to be readily assessed.”).³

We offer the following suggestions and examples to identify specific improvements that could be made to the Draft Guidance and topics for which additional explanation would be helpful.

1. We recommend that NMFS undertake a study comparing the assessment approach described in the Draft Guidance with the current assessment approach using case studies of various sources, both impulsive and non-impulsive, in different OCS regions, to demonstrate the regulatory and technical implications of the proposed criteria. Although the proposed criteria are not directly comparable to the criteria currently used, we believe the results of such a study

² *See* 67 Fed. Reg. 8,452, 8,459 (Feb. 22, 2012) (“In assessing the usefulness of information that the agency disseminates to the public, the agency needs to consider the uses of the information not only from the perspective of the agency but also from the perspective of the public.”). We also recommend that the Draft Guidance include a summary of the additional costs that are expected to result from implementation of the new criteria, with a comparison of the expected benefits.

³ NMFS considers the Draft Guidance to be a “highly influential scientific assessment” subject to the *National Oceanic and Atmospheric Administration Information Quality Guidelines* (“NOAA IQG”). “[I]nfluential scientific, financial, or statistical information” is specifically held to higher information quality standards. *See* 67 Fed. Reg. at 8,452, 8,455 (“OMB guidelines apply stricter quality standards to the dissemination of information that is considered ‘influential.’”). These standards further counsel in favor of more information addressing the implications and implementation of the proposed criteria. *See generally* NOAA IQG at 1-2.

would be very informative to the regulated community and would facilitate the development of additional public comments that would be helpful to NMFS as it revises and refines the Draft Guidance.

2. NMFS can improve the usefulness of the Draft Guidance and enhance the regulated community's ability to meaningfully comment by providing for public review a draft of the "user guide" that will inform and assist NMFS's implementation of new acoustic criteria. The draft of this implementation guide should be provided for review and comment along with the second version of the Draft Guidance.

3. The Associations support NMFS's determination that the proposed SEL_{cum} metric will be applied to discrete activities/sources and not used to accumulate sound exposure for multiple activities occurring over the same time period. The Draft Guidance also states that application of the proposed criteria "do[es] not represent the entirety of the impact assessment" and explains that other qualitative factors will be considered. However, the Draft Guidance provides little discussion or explanation of how these qualitative factors will be considered, the relative weight given to the factors, or how the factors will be implemented. We encourage the agency's consideration of qualitative factors in a manner that adds flexibility to the regulatory process. In addition to providing more discussion of these qualitative factors, it would be helpful for the Draft Guidance to include an explanation of the important role served by currently implemented mitigation and monitoring measures, which have been proven to substantially avoid and reduce incidental take.

4. The Draft Guidance does not address a significant category of Level B take (i.e., behavioral harassment). The vast majority of offshore oil and gas incidental take authorizations involve Level B take in the form of behavioral modification. It would greatly improve the regulated community's ability to meaningfully assess the implications of the proposed criteria if the Draft Guidance included an explanation of how the proposed acoustic criteria will be implemented in the absence of new criteria applicable to Level B behavioral harassment. Again, this will be an area for which flexibility is important.

5. It is not clear from the Draft Guidance whether NMFS intends there to be five different mitigation zones for five different functional hearing groups or whether NMFS will prescribe the most precautionary mitigation zone based on the most sensitive species but applicable to all marine mammals in the area. Both of these potential options present concerns. On the one hand, the application of multiple radii for different species will be operationally challenging to implement. If NMFS is considering the implementation of varying exclusion zones, then this approach may also require changes to the standards applicable to observer programs and additional training of protected species observers. As further addressed in the Appendix (¶ 6.1.3), it is also not clear how NMFS will address effects at multiple depths under this approach. On the other hand, prescription of a single mitigation zone based on the most sensitive species but applicable to all marine mammals in the area would not be consistent with the best available science. It would be helpful for NMFS to provide a clear description of how it

foresees the proposed criteria translating into specific operational mitigation and monitoring requirements.

6. The Draft Guidance appropriately recognizes that TTS is not an “injury,” but addresses TTS as a form of Level B harassment separate from behavioral modification. The Draft Guidance states that TTS “will be addressed for purposes of take quantification” after NMFS develops guidance for behavioral modification and that, in the meantime, “the TTS thresholds presented represent the best available science and will be used in the comprehensive effects analyses under the MMPA and the ESA and may inform the development of mitigation and monitoring.” However, it is not clear from the Draft Guidance as to how NMFS will specifically address TTS in the permitting process before behavioral modification criteria are finalized. For example, it is unclear as to whether NMFS is now going to require the use of three separate take thresholds (for PTS, TTS, and behavioral modification) and, if so, how NMFS will ensure that the permitting and implementation processes do not become too burdensome and complex. The Draft Guidance should more fully explain how these issues will be addressed.

7. It is not clear from the Draft Guidance whether or where NMFS will require sound source verification (“SSV”). In the experience of the Associations’ members, SSV poses a complicated and unnecessary burden on operations because the results of SSV are highly variable due to constantly changing conditions in the water column. If SSV is intended to be part of the standard protocol in the implementation of the proposed criteria, then it is important that the regulated community have the opportunity to provide informed input on this potential requirement. Specific recommendations regarding SSV are provided in the Appendix (§ 6.1.2).

8. The Draft Guidance addresses a complex subject, and this is reflected in an equally complex proposed approach with several options provided to applicants. The complexity of the proposed approach will result in increased time and expenses for applicants, as well as potentially strain the limited resources of specialized modeling firms. Additionally, the complexity of the Draft Guidance could create confusion among public stakeholders, possibly leading to mistaken interpretations or public statements regarding the purpose and intent of the Draft Guidance. More clarity on the purpose of the Draft Guidance, and how it will be implemented, would enhance both the regulatory and public perception aspects of the Draft Guidance.

9. In determining PTS and TTS onset levels, NMFS adopts two methodologies for determining quantitative factors that can be considered in conjunction with utilizing the numeric acoustic threshold levels: a marine mammal weighting function and an alternative acoustic threshold level. In so doing, NMFS recognizes that the applied weighting function will likely result in a lower estimate of take, but that the new methodology “might extend beyond the capabilities of some applicants” (i.e., smaller operators). This system could have inequitable results for operators who, for either cost or time reasons, may not be able to use the more complicated applied weighted factor methodology. It would be helpful for the Draft Guidance to

include more explanation to inform applicants about the potential costs, benefits, and consequences of each of these two methodologies.

10. In addition, if the incidental take estimate in a five-year ITR is based on non-weighted PTS and TTS thresholds, then the estimate will be unrealistically high. Alternatively, if an ITR is based on a weighted approach using contemporary modeling, LOA applicants who use the unweighted approach may complicate the agency's ability to reasonably manage and implement the ITR. We recommend that NMFS explain how it plans to implement future ITR/LOA processes, or multiple IHAs, in a context in which two approaches to estimating potential takes are stated in the agency's guidance.

We provide the above suggestions and examples to highlight the need for more information regarding the implementation of the proposed criteria and to identify specific opportunities for improvement. We respectfully request that NMFS revise and reissue the Draft Guidance, and a draft implementation guide, in a manner that comprehensively addresses the concerns described above and below.⁴

B. The Draft Guidance Presents a Number of Scientific and Technical Concerns That Must Be Addressed Before NMFS Issues Final Guidance

In general, the Associations support the development of new acoustic criteria based upon the best scientific information available, such as the findings and principles stated in Southall et al. (2007) and Finneran and Jenkins (2012). However, we have several scientific, technical, and operational concerns about the Draft Guidance. The following comments address these concerns.

1. TTS Thresholds

The Draft Guidance concludes that TTS is not an "injury" for MMPA purposes and should, at most, be considered Level B harassment. The Associations concur with this finding. The best available science indicates that hearing for marine mammals that have experienced TTS returns to normal within hours or days and that post-exposure behavior returns to normal. *See, e.g.,* Mooney et al. (2009a, 2009b); Popov et al. (2011); Finneran and Schlundt (2013). Moreover, behavioral studies indicate that marine mammals tend to move away from a sound

⁴ It is not clear whether NMFS reviewed the Draft Guidance pursuant to the National Environmental Policy Act ("NEPA") or, alternatively, determined that NEPA does not apply. The second version of the Draft Guidance should clarify NMFS's determination regarding the applicability of NEPA and provide NEPA review documentation, if any, for public review.

source if it is disruptive, which significantly diminishes the potential for any TTS-related effects. *See* Nowacek et al. (2007). The data collected in experiments in which animals are exposed to sounds in a controlled setting likely result in overestimates of exposure because the subjects are exposed to much longer and louder sounds than they would be in the natural environment.

In addition, the Draft Guidance does not incorporate significant recent research regarding the auditory effects on bottlenose dolphins from multiple impulses of a seismic source (Finneran et al. (2011); Finneran et al. (2012); Schlundt et al. (2013)). These studies exposed three different bottlenose dolphins to multiple (10) impulses of a seismic airgun, SEL_{cum} 195 dB re 1 μPa^2 -s, without any measurable TTS. The Draft Guidance proposes a TTS onset for impulsive sounds for mid-frequency cetaceans at SEL_{cum} 172 dB re 1 μPa^2 -s. This is an extraordinarily low and unrealistic threshold given that the Finneran research could not induce TTS at 195 dB re 1 μPa^2 -s. The draft TTS onset criteria should be revisited to consider Finneran and Schlundt's recent and more directly applicable work. As stated in Finneran et al. (2012), "[t]hese data suggest that the potential for seismic surveys using air guns to cause auditory effects on dolphins and similar delphinids may be lower than previously predicted."

Finally, the Draft Guidance describes criteria applicable to animals likely to experience TTS during marine operations that produce underwater sounds.⁵ In most cases, the authors of the available relevant studies have not used the highest levels required to induce TTS, and NMFS has excluded studies in which TTS was not induced by sound levels equivalent to those in the proposed criteria. *See* SEAMARCO (2011); Kastelein et al. (2013). As a result, animals exposed at levels associated with TTS as currently proposed will not necessarily experience TTS and, therefore, the methods described in the Draft Guidance can only be used to estimate the number of animals that could potentially experience TTS.⁶ Accordingly, the highest exposure that did not induce TTS in recent studies must be included in the data set used to develop the TTS thresholds, as referenced above. The Draft Guidance should also identify and describe each

⁵ The data for establishing TTS for representative species come from a small number of animals. The lack of available data underlying the proposed acoustic criteria is not clearly addressed or explained by NMFS. Although NMFS is required to consider the best available science, it also has an obligation to explain the limitations of the information being used as a basis to develop important agency policy and guidance.

⁶ The Draft Guidance references recent studies by Kujawa and Liberman (2009) and Lin et al. (2011) that indicate that even if a full recovery is observed after TTS in small mammals, some neurological damage was permanent. However, these results cannot be extrapolated to other species because the data are very limited and the implications for actual negative effects on the animal's ecology, behavior, or fitness have yet to be measured. Additionally, these two studies investigated extreme TTS, and, therefore, it is not known whether similar effects would occur in marine mammals at lower TTS levels.

instance in which conservative thresholds are selected (i.e., selecting the lowest TTS threshold in a small sample size), and TTS onset in these instances should be described as potential, not actual. This distinction is important because the Draft Guidance defines TTS, not “potential TTS,” as Level B harassment, and how Level B harassment is estimated has important relevance to the “small numbers” and “negligible impact” determinations that must be made in support of MMPA incidental take authorizations.

2. Functional Hearing Groups, Weighting Functions, and Threshold Criteria

In general, knowledge of basic hearing is still limited for most species of marine mammals. Finneran and Jenkins (2012) provided the most updated list of species whose hearing has been scientifically measured. Although some groupings of marine mammals that hear similarly may be appropriate, the extrapolated hearing ranges presented in the Draft Guidance are not consistent with the best available science (Southall et al. (2007) and Finneran and Jenkins (2012)) in a number of respects.

First, the extension of the hearing range of low-frequency cetaceans is not supported by empirical evidence. There is no evidence indicating that mysticetes hear above 20-22 kHz, and there are no empirical data to support the Draft Guidance’s expansion to 30 kHz. The data presented in the Draft Guidance do not provide additional scientific information to justify expanding the hearing of low-frequency cetaceans to 30 kHz.

Southall et al. (2007) indicated that vocalizations are unlikely to always predict hearing ranges. Animals tend to hear best around the frequencies they use for communication and echolocation (Ketten 2002), but can also extend below and above the range of frequencies they use. There is empirical evidence that animals can produce sounds that they cannot necessarily hear and, therefore, Au et al. (2006) should not be used in determining the hearing range of low-frequency cetaceans. For instance, Nachtigall et al. (2007) showed that white beaked dolphins do not hear past 181 kHz, even though they are often recorded producing sounds up to 305 kHz (Mitson 1990) and clicks have secondary peak at 250 kHz (Rasmussen et al. 2002). Therefore, harmonics above 20 kHz do not necessarily imply hearing in mysticetes. The Draft Guidance cites Tubelli et al. (2012) and Ketten and Mountain (2009), which are predictions based on anatomical modeling and are yet to be validated by empirical data.⁷

Moreover, the frequency weighting functions in Figure 2 of the Draft Guidance are based on no empirical data and imply that low-frequency cetaceans are much more sensitive to acoustic exposure than was formerly believed or than what the current research supports. There is also no clear explanation or support for the low-frequency cetacean auditory weighting function

⁷ Tubelli and Stein (2007) reported only potential response to 22 kHz signals.

parameters presented in Table 3. The low-frequency criteria should be based on Southall et al. (2007) and Finneran and Jenkins (2012).

Second, the hearing ranges of otariids and phocids, as proposed in the Draft Guidance, are different than the hearing ranges stated in Finneran and Jenkins (2012) (respectively, 75 Hz to 75 kHz and 100 Hz to 50 kHz). Southall et al. (2007) defined the hearing range limits as being approximately 80 dB above the lowest thresholds. However, in Kastelein et al. (2009), thresholds for phocids are more than 80 dB above the most sensitive thresholds and should not be considered to be within the functional hearing range. Likewise, Hemilä et al. (2006)'s data were based on anatomical studies, not empirical hearing data and should not substitute for actual hearing measurement data. Accordingly, for establishing reliable hearing ranges for otariids and phocids, the Draft Guidance should use the thresholds reported in Finneran and Jenkins (2012) and in Reichmuth et al. (2013). Recent work by Sills et al. (2014) provides additional support that the 70-80 kHz range encompasses the high frequency cut-off for phocids with a threshold of 101 and 102 dB at 72.4 kHz. For otariids, Finneran and Jenkins (2012) reviewed all of the best available data and recommended an underwater hearing range of 100 Hz to 50 kHz (100 Hz to 35 kHz in air). The Draft Guidance does not clearly explain why 40 kHz was selected as a high frequency cut-off for otariids instead of 50 kHz and there is no recent empirical study to support that proposed modification.

Third, the Associations are concerned with the proposed criteria for both impulsive and non-impulsive sound for high-frequency cetaceans. For impulsive sound, the proposed high-frequency cetacean thresholds are based on the underlying data from a single study involving a single animal (harbor porpoise) (Lucke et al. 2009) in which large variations in ambient noise may have caused confounding effects on the SEL_{cum} and SPL_{peak} threshold estimates.⁸ For non-impulsive sound, the extrapolation for high-frequency cetaceans is based on a single study involving only two animals (Popov et al. 2011), and the non-impulsive SPL_{peak} values are extrapolated from data on impulsive sounds rather than using the data available for non-impulsive sounds. Popov et al. (2011) recognized that their data might be biased due to multiple exposures in one day and the absence of data on the variability of baseline thresholds, which could add uncertainty and confounding factors to the TTS estimates. This highlights the need for flexibility in the implementation of the final acoustic criteria in future regulatory processes.

3. Addressing Limited Data

⁸ Finneran and Jenkins (2012) separated harbor porpoises from other high-frequency cetaceans for their behavioral thresholds because there is evidence showing that this species reacts to quieter sounds than most high-frequency cetaceans. Accordingly, using the harbor porpoise as a surrogate species for high-frequency cetaceans is unlikely to be representative.

Generally, the Draft Guidance notes that the proposed criteria are based upon research using very few marine mammals. To address limited data, the agency explains that it will choose the lowest threshold value if there are less than five relevant studies and that it will identify a median value if there are five or more studies. The Associations respectfully disagree with this approach and propose that NMFS consider the best available information, regardless of the number of available studies and, as required by the MMPA and the ESA, develop thresholds that most accurately reflect all of the available science rather than applying a conservative approach by choosing a low reported value to the exclusion of other available information.

4. Equal Energy Hypothesis

The use of SEL_{cum} is practical in the sense that it allows researchers and operators to compare sound events with various SPL and time durations. For transient sounds, SEL_{cum} is also practical as it expresses the total energy as opposed to the maximum energy. However, SEL_{cum} is used under the assumption that a low amplitude and long signal with an equal SEL_{cum} as a loud and short signal will have the same effects on the auditory system (the Equal Energy Hypothesis (“EEH”)). The EEH may be correct in certain conditions, but an increasing body of evidence indicates that the EEH does not hold true in most marine mammal sound exposures. As recognized in the Draft Guidance, the EEH is not supported by several studies. *See* Kastelein et al. (unpublished); Popov et al. (2011); Popov et al. (unpublished), Supin (Aug. 2013 Abstract); *see also* Mooney et al. (2009a); Finneran et al. (2010b); Kastak et al. (2005); Kastak et al. (2007); Mooney et al. (2009b); Finneran et al. (2010a); Kastelein et al. (2012a); Kastelein et al. (2012b). Therefore, the use of SEL_{cum} has some practical aspects, particularly in the absence of a complete data set. However, as more data become available, more analyses should be performed to determine what model or equation best fits the EEH, and how the SEL_{cum} criteria should be revised to more accurately reflect the potential for TTS changes with duration and amplitude.

5. Marine Mammals’ Ability to Adjust Hearing

There is a growing body of science regarding the ability of marine mammals to adjust their hearing when exposed to loud sounds. *See* Popov (Aug. 2013 Abstract); Nachtigall and Supin (2013). This research describes the ability of cetaceans to voluntarily reduce the level of incoming sound by up to 13 dB through the use of an active noise control system. However, these studies do not appear to have been considered in the Draft Guidance. Consistent with its obligation to use all of the best available science and the recognized need for flexibility, NMFS should address and consider these studies if presented by applicants during the permitting in process, and review and update the Guidance as necessary as this area of science becomes more fully developed.

6. Recovery

In general, SEL_{cum} is an appropriate way to measure transient sounds because it allows comparisons between sound exposures of different natures or durations. However, the proposed

threshold criteria assume no recovery between sound exposure events for intermittent and repeated exposures. Given the current knowledge of TTS, this assumption may be inaccurate. Existing studies indicate that recovery may occur in both terrestrial and marine mammals, and research suggests that marine mammals have other adaptive strategies that protect them from sound (Nachtigall and Supin 2013). We recommend that NMFS include a recovery function in the Draft Guidance, and incorporate the work of Finneran et al. (2010) and Finneran and Schlundt (2013). Although these studies are limited in scope, their validity is not in question.

7. Accumulation Periods

The selection of one-hour and 24-hour accumulation periods are not biologically based, and we suggest that NMFS revise the Draft Guidance to expressly allow for the option of SEL_{cum} modeling for the duration of the activity in addition to the one-hour and 24-hour options. We also request that NMFS provide additional information to footnote 15 on page 13 of the Draft Guidance. This footnote indicates that the SEL_{cum} metric is not meant to accumulate sound exposure for multiple activities or for naturally occurring sounds, but very little supporting explanation is provided.

8. Continuous and Impulsive Sounds

The Draft Guidance's definitions of continuous and impulsive sounds are vague and do not objectively distinguish these two types of sound. Impulsive sounds become increasingly continuous with distance, due to multipath arrivals and other factors, and may have continuous components even at short distances, due to reverberation. Accordingly, clear technical definitions of continuous (non-impulsive) and impulsive sounds from geophysical sources, based on the best available scientific literature, should be included in the Draft Guidance. *See* Southall et al. (2007). NMFS should also consider waveform data at the location of the receiver (i.e., the marine mammal) as one of the parameters to determine the impulsive nature of signals covered by these criteria.

9. Relevant Recent Research

A substantial amount of information recently presented at scientific conferences should be considered in the Draft Guidance. *See* Abstracts from The Effects of Noise on Aquatic Life

(Budapest, Aug. 2013);⁹ Popov et al. (unpublished). Among other things, this new information addresses (i) the effects of low-frequency sound as well as EQL for pinnipeds, and (ii) the validity of EEH. Moreover, Southall et al. (2007) will be updated to address the results of recent research, and the proceedings of the August 2013 International Conference on the Effects of Noise on Aquatic Life will soon be published. If this work is available when NMFS prepares a second version of the Draft Guidance or before final guidance is issued, it should be considered and incorporated.¹⁰

C. New Acoustic Criteria Should Not Result in More Regulatory Burdens for Offshore Industries

For many years, marine mammal incidental take authorizations for the oil and gas industry have been authorized by NMFS and FWS on a project-by-project basis (i.e., IHAs) or through the issuance of ITRs and related LOAs. The best available science and information demonstrates that these authorizations have resulted in no detectable adverse impacts to marine mammal populations. Although we support NMFS's development of new criteria that are consistent with the best available science, these new criteria should not be implemented in a manner that results in increased regulatory burdens because the best available information shows that offshore sound-producing operations, as currently regulated, have had no more than a negligible impact on marine mammal species and stocks. The Associations are concerned that the Draft Guidance will unnecessarily result in more difficulties with the permitting process, an increased number of shutdowns, longer survey duration, increased costs, and increased exposure to safety risks. We therefore ask that NMFS consider the record of offshore sound-producing activities in effectively minimizing and mitigating effects to marine mammals as it further refines the implementation processes for the proposed criteria.

IV. CONCLUSION

We appreciate the effort that NMFS has devoted to the development of new acoustic criteria. We support this effort generally but, as detailed above, we have a number of concerns about the implementation processes and the lack of substantive support for some of the proposed criteria. We respectfully ask NMFS to address these concerns and issue a revised version of the Draft Guidance, as well as a draft implementation guide, for public review and comment. The Associations will continue to support a process that is comprehensive, transparent, consistent with the best available science, and fully informed by the public.

⁹ More information and citations regarding the work presented at this conference are provided in the "References" section of this comment letter.

¹⁰ Sills et al. (2014) and Wensveen et al. (2014) are examples of emerging science that NMFS should consider in its development of acoustic criteria.

Should you have any questions, please contact the undersigned at 202.682.8584, or via e-mail at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



Andy Radford
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Karen St. John
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Jeffrey Vorberger
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Appendix
NMFS Draft Acoustic Criteria Implementation Issues
Comments of API, IAGC, NOIA, and AOGA

1. Introduction

- 1.1. The draft acoustic criteria guidelines proposed by NMFS (the “Draft Guidance”) provide a significant change of approach and level of complexity in evaluating acoustic impacts on marine life. While much of the Draft Guidance primarily presents topics as research-related technical issues to inform the agency’s decisions regarding threshold levels, the document does highlight the importance and difficulty in operationalizing or implementing the proposed criteria in the context of applying for, issuing, and complying with incidental take authorizations pursuant to the MMPA, ESA and NMSA.
- 1.2. Overall, there is insufficient discussion in the Draft Guidance explaining how the proposed criteria would be implemented, how they will be measured by the regulated community in a meaningful way, how the permitting process may be affected, how monitoring requirements will change, or how common mitigation practices employed by the oil and gas industry for years and are proven to reduce sound impacts on marine mammals will be adequately considered.
- 1.3. The Draft Guidance provides little explanation of the anticipated impact of the new criteria on the offshore oil and gas industry. Unfortunately, the NMFS did not undertake – or did not present – information from any modeling exercises to show the practical effect of the proposed changes on either environmental protection or burden on industry. The Associations would encourage such an evaluation be conducted before the Criteria is finalized and/or an Implementation Guide is prepared.
- 1.4. Although we appreciate that comparison is made more difficult because the new criteria are based on different metrics, it is certainly possible for the agency to perform a rigorous analysis - perhaps using case studies or examples - of a “baseline” of how the agency now handles implementation versus how it will practically work in the future in the context of demonstrable risks to marine life from industry activities. Such a risk-based approach is encouraged.
- 1.5. Due to the lack of clarity around these practical issues, the Associations suggest that NMFS revisit these issues and (1) publish a revised Draft Acoustic Criteria document and (2) prepare a companion Acoustic Criteria Implementation Guide issued concurrently to bring greater certainty to both resource managers and the regulated community about the practical path forward. Both of these documents should be subject to public review and comment.
- 1.6. Industry is ready and willing to support and actively participate in discussions with agency officials and/or in workshops to facilitate greater input to development of the recommended Implementation Guide. Below, we offer preliminary input on a variety of implementation-related issues that should be addressed in this dialogue.

2. Balance Between Flexibility & Predictability

In general, the Associations believe that flexibility in assessing and mitigating effects is prudent given the diversity of marine mammal species' hearing ranges, the range of effects, and acoustic source characteristics. However, this flexibility should be balanced by the objective of greater clarity, predictability and consideration of effort, resource availability and expense borne by the agencies and industry. The Guidance, as noted, should provide a comparison of the previous approach and what is now recommended. The Associations are particularly interested in the agency's view of the impact the changes will have on permit applications and the agency's time requirements to process them.

3. Use of the Criteria in the Permitting Process

The Draft Guidance provides a brief reference to its use in the current 14-question IHA permit application. It is recommended that the Implementation Guide include a much fuller presentation of how this process will be applied. Below are a few associated issues such a guide should address.

3.1. How will the Draft Guidance be implemented in (i) the context of a five-year ITR (with specific take authorizations by LOA) and (ii) when numerous IHAs are issued for a given area in the absence of an ITR? Specifically, will the agency use different methods to estimate the amount of authorized incidental take in each of these contexts? In addition, how, if at all, will authorized take be allocated over certain periods of time in one or both of these contexts?

4. Clarification Regarding PTS/TTS

4.1. The Draft Guidance is confusing and should be further clarified regarding PTS/TTS. On page 20 NMFS says, ““NOAA equates the onset of PTS, which is an auditory injury, with “Level A Harassment” as defined in MMPA and with “harm” as defined in ESA...NOAA does not consider TTS to be an auditory injury and thus it does not qualify as Level A Harassment or harm. Nevertheless, TTS is an adverse effect that constitutes another kind of “take.”...NOAA currently is in the process of developing new thresholds for onset of behavioral effects. When that process is completed, TTS will be addressed for purposes of take quantification. In the meantime, the TTS thresholds presented here...will be used in comprehensive effects analysis...and may inform the development of mitigation and monitoring.”” This language is too vague and open-ended to inform meaningful comments.

4.2. While NMFS has limited the Draft Guidance to Level A takes, defined as auditory injury equated with PTS, the Draft Guidance makes extensive reference to TTS. Clarification is needed as to why TTS is included in the present document, which does not include behavior. The Guidance and Implementation Guide should be explicit if TTS serves another role in discussion of injury. If it does not, the potential role of TTS in behavior should be deferred to publication of draft criteria for Level B behavioral harassment.

5. Model Related Issues

- 5.1. The Draft Guidance identifies a diverse set of approaches in evaluating acoustic effects and provides a general point of view that models provide a more accurate assessment of acoustic effects. The Associations would note that without model validation/verification this assumption is untested and recommends that NMFS undertake this as part of the process of developing the final acoustic criteria.
- 5.2. The Draft Guidance suggests that a variety of model approaches and models could be employed. It is noted that the regulated community is responsible for selecting a methodology for implementing the acoustic criteria and presenting it to NMFS. While the Associations appreciate and encourage this flexibility, we also recommend that NMFS establish more specific model acceptance criteria.
- 5.3. Depending upon NMFS's decisions on the extent and depth of modeling requirements, it is likely that both the current range of modeling vendor choices and their capacity will be inadequate to fulfill the agency's requirements, which could lead to unwarranted permitting delays or costs. The Implementation Guide should address how this transition period, which will necessitate an expansion of the pool of adequate modeling expertise and vendors, will be effectively managed.

6. Data Input Requirements

- 6.1. Data input requirements should be more explicit. These requirements should be practicable and should consider the whether the demand for precision and survey-by-survey information will really yield a substantively more informed resource management decision considering the overall lack of information, natural variability, and environmental confounding factors.
- 6.2. Sound Source Verification: For the Gulf of Mexico, an area of high seismic survey activity, project specific sound source verification is impractical. The Associations recommend that NMFS model a typical source array in 9 GoM zones (3 (shallow, shelf and deep) in each of the 3 Planning Areas) by season using a number of sound velocity profiles available from publically available NOAA CTD data. NMFS should then conduct sensitivity analyses on these profiles to determine seasonal variability and create a range of transmission loss profiles for individual model outputs to satisfy. Then, empirical data could be collected on a select number of representative projects rather than all projects, to also verify that the empirical data falls within the modeled range.
- 6.3. Water Depth Differentials: Industry recommends continuation of the existing BOEM approach to evaluate acoustic effects within standardized categories of submerged lands depth and bottom conditions rather than individual project assessments. Such an approach would provide a level of accuracy/precision sufficient for informed monitoring/mitigation decision-making. In the Gulf of Mexico, this would consider shallow water, the slope and deep water within the Western, Central and Eastern planning areas. This approach could include bottom conditions such as hard bottoms or soft sediments, which substantively affect sound propagation.

7. Implementation of Observation/Exclusion Zones

- 7.1. The Draft Guidance provides thresholds for five hearing groups, but it is not clear how these thresholds will be applied when determining safety or exclusion zones. The Implementation Guide should address how this will be practically and flexibly carried out. The Guidance should include recent approaches that give discretion for decisions involving shutdowns for dolphins that are deemed to be in the ensonified area voluntarily.
- 7.2. It is possible that the size of model-established exclusion zones will be larger than that which can be effectively monitored. Where that is the case, the Associations recommend that NMFS employ a practical limit to an area that can be effectively be monitored as it has in LOAs issued to the U.S. Navy.

8. Exposure Duration

- 8.1. Provisions are made for use of either a 1-hour or a 24-hour accumulation period depending upon whether models that calculate animal and/or source movement and exposure are used.
- 8.2. Exposure is a function of both movement of the vessel and movement of animals. In addition, animal movement is both lateral and vertical. The Draft Guidance should clarify and confirm NMFS's consideration of these factors as well as consider the reduction in incidental takes that results from avoidance.
- 8.3. We suggest that NMFS revise the Draft Guidance to expressly allow for the option of SEL_{cum} modeling for the duration of the activity in addition to the 1-hour and 24-hour options and utilize the approach with the smallest estimated number of estimated potential marine mammal exposures.
- 8.4. Implementation of the acoustic accumulation period should provide a way to consider periods of reduced or no sound propagation for power-downs and line turns (which could allow for recovery) to be more accurate.
- 8.5. Clarification regarding NMFS's approach for use of the SEL_{cum} metric would be helpful. The agency indicates SEL_{cum} is not meant to accumulate sound exposure for multiple activities or for naturally occurring sounds; however, no alternative metric is provided for this type of assessment.

9. Consideration of Mitigation Factors

The Draft Guidance notes that a variety of factors, some of which are not explicitly considered in the quantification of incidental takes, are in fact relevant. The Associations agree. In particular, avoidance behavior and the effect of ramp-up, power down, and shutdown in reducing takes are significant. The Implementation Guide should review and consider improvements in how these impact avoidance factors are given equal consideration in the agency's effects analysis. It is very likely that these avoidance factors are especially meaningful in explaining the discrepancy between the numbers of model-predicted incidental takes and actual observations in the field.



September 14, 2015

VIA Federal eRulemaking Portal

Chief, Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226
Attn: Acoustic Guidance

Re: Comments on Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing—**NOAA-NMFS-2013-0177**

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute (“API”), the International Association of Geophysical Contractors (“IAGC”), and the Alaska Oil and Gas Association (“AOGA”) (collectively, the “Associations”) in response to the National Marine Fisheries Service’s (“NMFS”) Notice and Request for Comments on the second version of its Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (“Second Draft Guidance”). *See* 80 Fed. Reg. 45,642 (July 31, 2015). We appreciate NMFS’s consideration of the comments set forth below.

I. INTRODUCTION

A. The Associations

API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers.

IAGC is the international trade association representing geophysical services companies that support and provide critical data to the oil and natural gas industry. IAGC members (including companies engaged in geophysical data acquisition, processing, and interpretation; geophysical information ownership and licensing; and associated services and product providers)

play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

AOGA is a non-profit trade association located in Anchorage, Alaska. AOGA's 14 member companies account for the majority of oil and gas exploration, development, production, transportation, refining, and marketing activities in Alaska. AOGA's members are the principal oil and gas industry stakeholders that operate within the range of marine mammals in Alaskan waters and in the adjacent waters of the Outer Continental Shelf ("OCS"). AOGA and its members are longstanding supporters of wildlife conservation, management, and research in the Arctic. AOGA has for many years successfully petitioned for, and defended in court, incidental take regulations applicable to offshore oil and gas activities.

B. Responsible Offshore Development

The OCS is a significant source of oil and gas for the nation's energy supply. In 2014, offshore areas of the United States supplied over 9 percent of the country's natural gas and oil production, and are estimated to contain roughly 17 percent of the oil and 12 percent of the natural gas resources in remaining undiscovered fields in the United States. The important role of oil and gas exploration and development in the OCS is clearly reflected in the Outer Continental Shelf Lands Act ("OCSLA") and its implementing regulations. Under those authorities, implementing agencies are mandated to preserve, protect, and develop oil and natural gas resources in the OCS in a manner that is consistent with the need to (i) make such resources available to meet the nation's energy requirements as rapidly as possible, and (ii) balance orderly energy development with protection of human, marine, and coastal environments. *See* 43 U.S.C. §§ 1332(3)-(5), 1346, 1348; 30 C.F.R. §§ 250.101, 250.107.

Geophysical surveys using seismic reflection are an essential, state-of-the-art component of oil and gas exploration in the OCS. Geophysical data are used by both industry and federal agencies to make informed economic and regulatory decisions regarding potential accumulations of oil and natural gas. As one of the earliest components of the lengthy process leading from leasing of lands to exploration, development, and production of hydrocarbon resources, seismic surveys are critical to the OCS resource development mandated by Congress in OCSLA and have been demonstrated to have no detectable long-term impacts on the marine environment.

Geophysical surveys facilitate the safe and orderly development of OCS oil and gas reserves. Seismic modeling not only helps to delineate reserves, it also significantly reduces environmental risk by increasing the likelihood that exploratory wells will successfully tap hydrocarbons and decreasing the number of wells that need to be drilled in a given area. This reduces the overall environmental impact of oil and gas development by limiting the footprint of exploration. Because survey activities are temporary and transitory, they are the least intrusive and most cost-effective means to understanding where recoverable oil and gas resources likely exist.

More than four decades of worldwide seismic surveying and scientific research indicate that the risk of physical injury to marine life from seismic survey activities is extremely low. Currently, there is no scientific evidence demonstrating biologically significant negative impacts to marine life from seismic surveying. As stated by the Bureau of Ocean Energy Management in its August 22, 2014, *Science Note*:

To date, there has been no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic activities adversely affecting marine animal populations or coastal communities. This technology has been used for more than 30 years around the world. It is still used in U.S. waters off of the Gulf of Mexico with no known detrimental impact to marine animal populations or to commercial fishing.

<http://www.boem.gov/BOEM-Science-Note-August-2014/>.

II. COMMENTS

The Associations want to again acknowledge the significant effort involved in examining the scientific literature available on the topic of marine sound and its potential impacts on marine mammals. We recognize that this topic is complex and informed by an evolving base of scientific knowledge, and we appreciate the challenges and effort associated with translating the available information into functional criteria. We continue to support the goal of updating and developing acoustic criteria that are informed by, and consistent with, the best available science. We also support a continued effort in furtherance of this goal that is transparent and does not result in unnecessary or unsupported new processes or requirements for the regulated community.

The Associations carefully reviewed and analyzed the first version of the Draft Guidance (“First Draft Guidance”) and provided many specific comments, in which we identified opportunities for improvement, requested clarity on technical issues, and addressed legal concerns. We appreciate NMFS’s consideration of our earlier comments, some of which have been addressed in the Second Draft Guidance. Below, we address new issues specific to the Second Draft Guidance as well as restate some of our earlier comments that do not appear to have been incorporated in the Second Draft Guidance. We have divided these comments into those that are largely related to “procedural” matters and those that are largely related to “technical” matters (recognizing that there may be some overlap in these general categories). On the whole, the Associations support the agency’s issuance of the Second Draft Guidance in final, subject to the comments and recommendations provided below, which are intended to be constructive and to further improve the final guidance document.

A. Procedural Comments

1. Regulatory impacts

Marine mammal incidental take authorizations (“ITAs”) for the oil and gas industry have, for many years, been authorized by NMFS and the U.S. Fish and Wildlife Service. The best available science demonstrates that these authorizations have resulted in no detectable adverse impacts to marine mammal populations and that related monitoring and mitigation measures are effective. Although we support NMFS’s development of new criteria that are consistent with the best available science, these new criteria should not be implemented in a manner that results in increased regulatory burdens. The Associations are concerned that the Second Draft Guidance will require more time, more advanced technical expertise, and, therefore, higher costs associated with the preparation and federal review of ITA applications. The lack of guidance regarding the implementation of the new criteria (addressed below) will create regulatory uncertainty and result in unnecessarily burdensome and inconsistent permitting processes.

In this light, the Second Draft Guidance does not provide a full explanation of the anticipated impact of the proposed threshold levels and related modeling techniques on the regulated community, and there is no clear discussion of the regulatory implications of the proposed changes. In the final guidance, NMFS should provide a thorough explanation of the anticipated regulatory and economic impacts. Because the final guidance will be applied in a range of regulatory actions, we continue to recommend that, before the acoustic criteria become final, NMFS undertake a comparative assessment of the approach described in the Second Draft Guidance with the current assessment methods to demonstrate the regulatory implications of the proposed criteria. We recognize that the proposed metrics in the Second Draft Guidance are not directly comparable to current assessment methods, but we believe it is possible, and would be informative, to generally evaluate the regulatory impacts of both approaches for applicants.¹ Such scenarios or simulations could clarify implementation issues, but may also reveal limitations or unintended consequences that could be addressed before the new criteria are used in regulatory actions.

¹ In the same vein, in the *Supplemental Draft Environmental Impact Statement Effects of Oil and Gas Activities in the Arctic Ocean*, which was released March 21, 2013, NMFS stated its intent to incorporate the new acoustic criteria into the final environmental impact statement (“EIS”). We urge, due to the lack of clarity on the regulatory impact from implementation of the guidance, that the public be given an opportunity to provide written comments, in advance, regarding the incorporation of the final acoustic criteria into the Arctic EIS. This will ensure that the public can review and comment on the application of the acoustic criteria in the Arctic EIS.

2. Implementation concerns

As an initial matter, the Second Draft Guidance provides no clear explanation for how the agency uses “guidance,” the legal import of a guidance document, when the agency can and cannot deviate from guidance (as opposed to regulatory requirements), and how the agency will evaluate any deviations proposed by applicants. A clear discussion of these issues at the beginning of the document would be helpful and informative for the regulated community and the general public.

Additionally, the Second Draft Guidance presents uncertainty and potential complications regarding the implementation of the proposed criteria. As indicated above, the complexity of the methods proposed in the Second Draft Guidance will result in increased time and expenses and additional technical expertise for applicants, and will almost certainly lead to confusion in the regulated community as well as inconsistent applications and inefficient permitting processes. Although the Second Draft Guidance provides some general context for how the proposed criteria will be implemented, it does not provide a meaningful discussion outlining the key practical aspects or standards to be applied for the implementation of the criteria.

To eliminate uncertainty and potential future complications, the final guidance document should include a specific recommendation (with supporting analysis)² of how the implementation of the proposed criteria will affect existing offshore activities, monitoring protocols, estimated incidental take assessment, and the development of mitigation measures.³ For example, NMFS currently requires shut down and/or power down mitigation measures that are based on specific, non-cumulative acoustic criteria. However, the Second Draft Guidance contains no meaningful discussion about how similar avoidance-based mitigation measures will be implemented under the new criteria. The document also provides very little guidance to applicants regarding the take estimation methods (as opposed to exposure estimation) that the agency would prefer to be used in ITA applications.

² We strongly recommend that NMFS undertake a modeling exercise using available industry data and work with industry in developing a realistic scenario before publication of the final guidance. Completing a specific modeling exercise with the proposed draft criteria will provide the regulated community with proper guidance and clarity on how the proposed criteria should be implemented.

³ See 67 Fed. Reg. 8452, 8459 (Feb. 22, 2012) (“In assessing the usefulness of information that the agency disseminates to the public, the agency needs to consider the uses of the information not only from the perspective of the agency but also from the perspective of the public.”). As indicated above, we also recommend that the final guidance include a summary of the additional costs that are expected to result from implementation of the new criteria, with a comparison of the expected benefits.

We agree that it is important for NMFS to allow for sufficient flexibility in the regulatory process so that applicants can appropriately address the specific situations that arise in their ITA requests. Such flexibility enables innovation within the bounds of regulatory compliance. For example, there are many ways to estimate potential exposures of marine mammals to various sound levels, and future applicants should not be limited to estimating exposures using the specific criteria set forth in the Second Draft Guidance (or in Appendix E) if there are other methods that are more appropriate and scientifically justified.⁴ However, balanced against that flexibility, general guidance from the agency regarding take estimation methodologies and application of avoidance and mitigation measures—even if provided as nonexclusive examples—would be informative and would facilitate efficient and consistent permitting processes.⁵ Moreover, such general guidance would increase transparency, allow for more informed public review and comment, and help to “ensur[e] and maximiz[e] the quality, objectivity, utility, and integrity” of the information provided in the Second Draft Guidance, as required by the Information Quality Act. *See* Pub. L. No. 106-554, § 515 (2000); *see also* 67 Fed. Reg. at 8456 (“The more important benefit of transparency is that the public will be able to assess how much an agency’s analytic result hinges on the specific analytic choices made by the agency. Concreteness about analytic choices allows, for example, the implications of alternative technical choices to be readily assessed.”).⁶

⁴ It would be helpful for the final guidance document to provide more clarity regarding the timing and process for applicants that wish to utilize alternative approaches in their ITA applications.

⁵ As addressed in our comments on the First Draft Guidance, NMFS can improve the usefulness of new criteria by providing a “user guide” that will inform and assist NMFS’s implementation of the new acoustic criteria. If NMFS were to prepare a user guide, it should provide a draft for public review and input. In addition, IAGC is working with its members to develop processes to assist with the preparation of ITA applications and would welcome the opportunity to collaborate with NMFS, where appropriate, on efforts that facilitate efficient and consistent regulatory processes based on the best available science.

⁶ NMFS considers the Second Draft Guidance to be a “highly influential scientific assessment” subject to the *National Oceanic and Atmospheric Administration Information Quality Guidelines* (“NOAA IQG”). “[I]nfluential scientific, financial, or statistical information” is specifically held to higher information quality standards. *See* 67 Fed. Reg. at 8452, 8455 (“OMB guidelines apply stricter quality standards to the dissemination of information that is considered ‘influential.’”). These standards further counsel in favor of more information addressing the implications and implementation of the proposed criteria. *See generally* NOAA IQG at 1-2.

3. Consideration of qualitative factors

The Second Draft Guidance also recommends that certain qualitative factors be “considered within the comprehensive effects analysis.” Second Draft Guidance at 29. However, the document provides little discussion regarding how these qualitative factors will be considered, the relative weight given to these factors, or how these factors will be implemented. We encourage the agency’s consideration of qualitative factors in a manner that adds flexibility to the regulatory process and recommend that NMFS include more discussion in the final guidance regarding the application of qualitative factors. In addition, the discussion of qualitative factors in the Second Draft Guidance indicates that NMFS does not intend for qualitative information to be “used to reduce quantitatively predicted exposures produced by acoustic threshold levels.” Second Draft Guidance at 30. However, in many instances, consideration of qualitative factors (such as violation of the EEH or the failure to account for recovery in the 24-hour cumulative calculation) may demonstrate that there is less risk of PTS occurring than the quantitative analysis predicts. In these circumstances, consistent with the agency’s obligation to use the best available science and information, the qualitative information should be factored into the estimated exposure and take analyses, whether it results in an increase or decrease in the number of predicted incidental takes.

4. TTS thresholds and Level B harassment

The Second Draft Guidance appropriately concludes that TTS is not an “injury” for Marine Mammal Protection Act (“MMPA”) purposes and should, at most, be considered Level B harassment. The Associations concur with this finding, as it is based on the best available scientific information. However, the Second Draft Guidance also states that the TTS threshold levels “will be used in the comprehensive effects analyses under the MMPA and the Endangered Species Act (“ESA”) and *may* inform the development of mitigation and monitoring.” Second Draft Guidance at 40 (emphasis in original). Respectfully, this cryptic statement provides no meaningful value to the regulated community and, instead, creates uncertainty and confusion regarding NMFS’s intentions for future regulatory processes. We strongly recommend that NMFS provide more clarity and discussion in the final guidance regarding how the TTS threshold levels may or may not inform mitigation and monitoring. Without clarity from the agency on this topic, future ITA applicants will have no direction on whether and how they should address the TTS threshold levels when developing the mitigation and monitoring measures to be proposed in their applications.

In addition, the Second Draft Guidance does not address a significant category of Level B take (i.e., behavioral harassment), but also provides no explanation for how ITA applications will be processed after the new Level A thresholds are issued and before new Level B thresholds are developed. It would greatly improve the regulated community’s ability to meaningfully assess the implications of the proposed criteria if the final guidance includes an explanation for how the proposed acoustic criteria will be implemented in the absence of new criteria applicable to Level B behavioral harassment. It is also not clear from the Second Draft Guidance as to how NMFS

will specifically use the TTS threshold levels in the permitting process before behavioral modification criteria are finalized. For instance, it is unclear as to whether NMFS is going to require the use of three separate take thresholds (for PTS, TTS, and behavioral modification) and, if so, how NMFS will ensure that the permitting and implementation processes do not become too burdensome and complex. The Second Draft Guidance suggests that the TTS thresholds will not be used for “take quantification” purposes until the Level B threshold levels are developed; however, it also states that the TTS threshold levels will presently “be used in the comprehensive effects analyses under the MMPA and the ESA.” *Id.* The final guidance should clarify these statements and more fully explain how these issues will be addressed in ITA permitting processes.

5. Ongoing review of the best available science

We commend NMFS for its commitment to undertake review and revision of the final guidance on a regular basis to incorporate knowledge as it is acquired. We further suggest that NMFS maintain flexibility to promptly consider and address highly relevant new information that arises between the agency’s formal reviews. In addition, we encourage NMFS to continue supporting the science that has been, and is being, developed under the Sound and Marine Life Joint Industry Programme. See <http://www.soundandmarinelife.org/>. This program is one of the few coordinated efforts focused specifically on increasing the scientific understanding of the effects of sound on marine life.

6. NMSA concerns

The Second Draft Guidance clarifies that the new threshold criteria will be considered by NMFS and the Office of National Marine Sanctuaries for purposes of the National Marine Sanctuaries Act (“NMSA”). The Second Draft Guidance goes on to state, without any explanation, that TTS and “behavioral impacts” constitute “injury,” as that term is defined in the NMSA. See 15 C.F.R. § 922.3 (“injure” is defined as to “change adversely, either in the short or long term, a chemical, biological or physical attribute of, or the viability of”). It is not clear why the agency has made this conclusion, and, indeed, the studies cited in the Second Draft Guidance are not consistent with this conclusion. See Second Draft Guidance at 44 (citing Southall et al. (2007) (TTS is not a tissue injury) and Ward (1997) (“TTS is within the normal bounds of physiological variability and tolerance and does not represent physical injury”). If NOAA is determined to make such a sweeping legal conclusion regarding the application of the new criteria to the NMSA consultation process, then it must provide a detailed and well-supported explanation based on applicable law and the best available science. In addition, the public should have the opportunity to review and comment on this explanation, consistent with Administrative Procedure Act requirements.

B. Technical Comments

1. Alternative approach for estimating exposure

We appreciate NMFS's effort to provide a simplified alternative method for calculating estimated exposures to sound at the levels set forth in the Second Draft Guidance (Appendix E). However, while this alternative method might provide flexibility for calculations, simplifying the application of weighting functions as well as the source/receptor movement scenarios for SEL_{cum} calculations will introduce variability across activities, resulting in significant overestimation of exposure numbers. NMFS indicates in the Second Draft Guidance that it is prepared to provide tools to enable applicants to apply frequency-specific weighting functions without necessarily performing the mathematical calculations. However, these tools have not been made available for public review. Moreover, this two-tiered system for estimating exposures could have inequitable results for operators who, for either cost or time reasons, may not be able to use the more complicated applied weighted factor methodology and will resort to applying for an ITA that overestimates the amount of incidental take actually caused by the underlying activity.⁷ We strongly recommend that NMFS include a detailed discussion in the final guidance that informs applicants about the potential costs, benefits, and consequences of each of the two methodologies described in the Second Draft Guidance.⁸

Specifically, the final guidance should provide examples that demonstrate the quantitative metrics of the difference in outcome for a number of given signals when individual-based models are used and when Appendix E methods are applied. These examples should include comparison calculations that indicate how use of the "safe distance" calculation differs from models in which exposure is accumulated for individual computer entities (e.g., "animats") that may or may not move relative to the source. In addition, there are other assumptions in this "safe distance" calculation, such as exposures occurring at a constant depth and exposures being constant over a consistent swath for 24 hours, that may contribute to overestimation of exposure and that should be quantitatively demonstrated (or disproven) by calculated examples rather than requiring the user to assume that the "rounding error" associated with the Appendix E methodology is not significantly different than performing a more sophisticated analysis.

⁷ This will have negative impacts that extend beyond a single applicant. For example, if the incidental take estimate in a five-year incidental take regulation ("ITR") is based on the Appendix E methodology, then the estimate will be unrealistically high. Alternatively, if an ITR is based on a weighted approach using contemporary modeling, then letter of authorization applicants that use the unweighted approach may complicate the agency's ability to reasonably manage and implement the ITR. These are significant issues that, among others, are not addressed in the Second Draft Guidance.

⁸ The Associations recognize that the simplified movement methodology may be used in non-U.S. jurisdictions where there is less regulatory focus on exposure numbers.

2. Transition from impulsive to non-impulsive acoustic threshold levels

The Second Draft Guidance acknowledges that most analyses are based on sound characteristics at the source and that NMFS analyzes impacts at the receiver, which is provided as justification for creating an impulsive to non-impulsive transition zone at 3 km. NMFS recommends this 3 km transition zone based on a “peak pressure to pulse duration of 5000” as “an appropriately precautionary approximation of where most impulsive sound sources begin to transition to having physical characteristics less likely to result in auditory injury.” Second Draft Guidance at 119. We are aware of no biological basis for this assumption, and it appears to have been chosen through an arbitrary process of attempting to identify a value that generally provides a consistent break in the pressure/duration ratio (although the available data vary considerably). However, as NMFS recognizes, a pressure duration ratio of 5,000 is more often attained at ranges of 1-2 km, rather than 3 km as stated in Table B2, which argues even more strongly for a different criterion for switching from impulse to continuous thresholds. Contributions to spreading of the acoustic energy over time include frequency-differential travel paths and times, and multi-path reflections from the surface and bottom, as well as refractive effects within the water column and geology of the sea bottom. These effects do not usually contribute substantively to signal “spread” at such short ranges, especially in deep water. Furthermore, the possibility of multiple pressure peaks from multi-path propagation and frequency-differential propagation effects suggest that weighting calculations and even integration time windows might need to be changed at different distances in order to correctly characterize the dynamic change from an impulse waveform to something increasingly resembling a “continuous” sound of highly varying duration, frequency structure, and pressure peak(s). Instead of using this arbitrary process, NMFS should have applied the time/amplitude waveforms from the examples used in the Second Draft Guidance to generate the transition threshold, and then should have generated examples showing the difference that would result from applying impulse and non-impulse criteria at these ranges (1-3 km).

We recommend that NMFS prepare further quantitative applications of various source types and scenarios, include full explanations in the final guidance, and provide, as appropriate, a revised transition range for impulsive to non-impulsive acoustic threshold levels. In addition, we recommend that NMFS clearly state that establishing such a transition from impulsive to non-impulsive only applies to Level A harassment and not Level B harassment.

3. Accumulation period

The period over which SEL_{cum} is calculated is stated as 24 hours; however, there is no discussion in the Second Draft Guidance regarding the potential for recovery between pulses or intermittent periods of exposure within this 24-hour period. This is a significant issue that is not directly addressed in the Second Draft Guidance but that, if addressed, would potentially lead to more realistic results. In addition, although the Second Draft Guidance makes allowances for a shorter accumulation period, it does not, but should, make similar allowances for a longer accumulation period.

4. Proposed threshold limits

In addition to the comments set forth above, we have the following specific comments regarding certain elements of the proposed threshold limits:

- The upper and lower threshold limits are not set consistently as they were in Southall et al. (2007) at 80 dB above threshold of best hearing. For example, the upper threshold limit for phocid seals of 100 kHz is based on Kastelein et al. (2009), in which the threshold at 100 kHz is much higher than 80 dB above best hearing.
- The very low threshold limits presented for high-frequency cetaceans are based almost exclusively on a single study (Lucke et al. 2009). These data are most likely to be obtained by using Evoked Potential (“EP”) methods, rather than behavioral methods, which necessitates a change in acceptance of EP data since the criteria set forth in the Second Draft Guidance (and in the paper from which the criteria are derived) do not incorporate the extensive and growing body of EP hearing data. Finneran (2015) and NMFS provide an explanation based on the different outcomes of EP and behavioral testing. However, studies by Finneran, Popov, and other researchers are demonstrating that this relationship is consistent and, accordingly, that NMFS should allow greater reliance on EP data in future iterations of the guidance.
- The upper end of the auditory weighting function for low-frequency cetaceans—which is reduced from 30 to 25 kHz—is a significant improvement. The 25 kHz value is still arguably too high, but it is more consistent with the best available science than was the value proposed in the First Draft Guidance.
- The method used to arrive at a SEL_{cum} PTS threshold for low-frequency cetaceans and seals is determined in the Second Draft Guidance to be “unrealistic” for arriving at a peak-pressure PTS threshold for those groups, but no explanation is given for this conclusion. This section of the Second Draft Guidance needs more explanation.
- The method for deriving PTS onset values (SEL_{cum} and peak) from TTS onset threshold for impulse sounds is not well explained in the Second Draft Guidance. It appears that a very basic method was used, which the Associations understand may have been necessitated by the paucity of available data. Nonetheless, a more complete explanation of the values selected should be provided in the final guidance.

5. Sound source verification

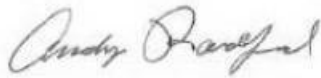
It is not clear from the Second Draft Guidance whether NMFS will require sound source verification (“SSV”) measurements to be made during permitted activities. In the experience of the Associations’ members, SSV poses a complicated and unnecessary burden on operations because the results of SSV are highly variable due to constantly changing conditions in the water column. If SSV is intended to be part of the standard protocol in the implementation of the new threshold levels, then it is important that the regulated community have the opportunity to provide informed input on this potential requirement and that it be based on the best available science.

III. CONCLUSION

We appreciate the effort that NMFS has devoted to the Second Draft Guidance, which represents a significant improvement over both the First Draft Guidance and the acoustic criteria guidelines that are currently used by NMFS. The Associations will continue to support a process that is comprehensive, transparent, consistent with the best available science, and fully informed by the public. We specifically support issuance of the Second Draft Guidance in final, subject to the additional comments and recommendations provided above.

Should you have any questions, please contact the undersigned at 202.682.8584, or via email at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



Andy Radford
American Petroleum Institute



Nikki Martin
International Association of Geophysical Contractors



Joshua Kindred
Alaska Oil and Gas Association



March 30, 2016

VIA Federal eRulemaking Portal

Chief, Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226
Attn: Acoustic Guidance

Re: Comments on Proposed Changes to Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing—**NOAA-NMFS-2013-0177**

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute, the International Association of Geophysical Contractors, the Alaska Oil and Gas Association, and the National Ocean Industries Association (collectively, the “Associations”) in response to the National Oceanic and Atmospheric Administration’s (“NOAA”) notice and request for comments on proposed changes to NOAA’s Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (“Draft Guidance”). *See* 81 Fed. Reg. 14,095 (Mar. 16, 2016). The Associations previously submitted extensive comments on both the first and second versions of the Draft Guidance.¹ Our comments on the newly proposed changes to the Draft Guidance are set forth below.

I. INTRODUCTION

As stated in our previous comments, the Associations recognize that the topic of marine sound and its potential impacts on marine mammals are complex and informed by an evolving base of scientific knowledge, and we appreciate the challenges and effort associated with translating the available information into functional guidance criteria. We also appreciate

¹ We incorporate our previous comments by reference, and expect that those comments will be included in the administrative record and fully addressed by NOAA. Collectively, the Associations represent the vast majority of all stakeholders engaged in the exploration and development of offshore oil and gas resources in the United States. The Associations are described in more detail in our previous two comment letters.

NOAA's efforts to appropriately obtain public and peer review input on the first two versions of the Draft Guidance. The Associations have been fully engaged in this process and have spent substantial amounts of time and resources evaluating both versions of the Draft Guidance and preparing comments to constructively inform this important process. Our position has been, and continues to be, that we will support a process that is comprehensive, transparent, consistent with the best available science, and fully informed by the public.

Unfortunately, NOAA has suddenly proposed to incorporate changes to the Draft Guidance in a manner that is not comprehensive, transparent, or consistent with the best available science. These proposed changes, if finalized, will also not be meaningfully informed by the public. NOAA's proposed changes are substantial, significant, and result in very different criteria than were proposed in the 2015 version of the Draft Guidance. Despite the magnitude of these proposed changes, NOAA has provided little or no supporting scientific analyses or explanations, has not yet subjected the proposed changes to peer review, and has offered the public an insufficient 14 days to evaluate the proposed changes and provide comments.²

We struggle to understand how a process that began three years ago, and that was intended to meaningfully involve the public at all stages, has so abruptly and inexplicably changed course. Considering that development of the Draft Guidance is a multi-year process, it would have been reasonable for NOAA to afford the public more than 14 days to review and provide comments on the proposed changes, particularly when those changes will drastically affect the application of the Draft Guidance. We cannot support the arbitrary process the agency has adopted as a means to quickly implement significant and substantial changes immediately prior to finalizing the Draft Guidance. Below, we have endeavored to provide objective comments as best we can in the short time allowed for public comment.

We recommend that NOAA retract the March 2016 proposed changes and instead engage in the peer review process applicable to highly influential scientific assessments, as occurred with the first and second versions of the Draft Guidance. Once that process is completed, NOAA should re-propose any necessary changes to the 2015 Draft Guidance and provide for a sufficient public review and comment period. If NOAA finds it necessary to produce final guidance before the process of incorporating any such changes can be completed, it should proceed with a final version of the 2015 Draft Guidance (revised, as appropriate, based on previously submitted public feedback), along with a user guide and implementation tools as promised in July 2015.

² Numerous requests for extensions of the public comment period were submitted to, and rejected by, NOAA.

II. PROCESS COMMENTS

Aside from the inadequate opportunity for public review and input, there are a number of other unsatisfactory aspects of NOAA's process for proposing changes to the Draft Guidance. These are detailed as follows.

First, although the proposed changes to the Draft Guidance are extensive and mathematically complex, they are incompletely documented and insufficiently explained in the March 2016 supplemental materials. This lack of substantive support is compounded by the fact that NOAA has not provided the technical tools or modeling scenarios that are necessary for the proper assessment of the new criteria and, particularly, the implications of the proposed changes. The absence of these user aids, which NOAA previously indicated would be made available, renders the analysis of the proposed changes very difficult and time-consuming. The completion of specific modeling scenarios or simulations is essential to inform the regulated community on how the proposed criteria will impact planning and operations during implementation. Additionally, such scenarios or simulations would also reveal limitations or unintended consequences that must be addressed before the new criteria (and particularly the proposed changes) are finalized and used in regulatory actions.³ NOAA's failure to provide the support necessary for the newly proposed criteria to be readily assessed further emphasizes the unreasonableness of the 14-day comment period.

Second, NOAA commissioned peer reviews of the first and second versions of the Draft Guidance before those versions were released for public review. As a result, the public was able to review and comment on draft criteria that were already informed by expert peer review, and summaries of the peer review results were provided to the public. In contrast, the currently proposed changes to the Draft Guidance were inexplicably rushed out for public review and comment without any peer review. NOAA states that it will, at some point, submit these proposed changes for peer review, which will almost certainly result in corrections and modifications to what is currently proposed. However, the public will have no opportunity to review and comment on the peer-reviewed version of the changes to the Draft Guidance.⁴

³ Rather than rushing significant changes to the Draft Guidance through an uninformed process, NOAA should be seeking to "ensur[e] and maximiz[e] the quality, objectivity, utility, and integrity" of the Draft Guidance, as required by the Information Quality Act. *See* Pub. L. No. 106-554, § 515 (2000); *see also* 67 Fed. Reg. 8452, 8456 (Feb. 22, 2012) ("The more important benefit of transparency is that the public will be able to assess how much an agency's analytic result hinges on the specific analytic choices made by the agency. Concreteness about analytic choices allows, for example, the implications of alternative technical choices to be readily assessed.").

⁴ NOAA admits that the Draft Guidance is a "highly influential scientific assessment" subject to the *National Oceanic and Atmospheric Administration Information Quality Guidelines* (continued . . .)

Third, NOAA’s statement that it may “re-evaluate [its] methodology for LF [low-frequency] cetaceans when th[e] updated Southall et al. publication becomes available” further raises the question of why NOAA is hurriedly implementing the proposed changes now. Given the significance of the proposed changes, and the fact that the proposed criteria may change again upon release of the anticipated Southall *et al.* publication (as referenced in footnote 3 of the March 2016 proposed changes to the Draft Guidance), the Associations request that NOAA expressly commit to updating the acoustic criteria no later than six months after the issuance of that publication. This request is particularly reasonable given that NOAA apparently plans to finalize the proposed acoustic criteria with full knowledge that the new Southall *et al.* paper will be published soon.

Fourth, NOAA continues to remain silent on how the agency plans to use the Draft Guidance, under what circumstances the agency believes it can and cannot deviate from guidance (as opposed to regulatory requirements), and how the agency will evaluate any deviations proposed by applicants. The errors and unjustified assumptions contained in the proposed changes further emphasize the fact that future applicants for incidental take authorization will almost certainly be compelled to propose analyses that necessarily deviate from NOAA’s acoustic criteria in order to remain faithful to the best available science.

Fifth, the proposed changes appear to be driven by (non-public) discussions internally among NOAA staff and possibly experts within the U.S. Navy. The proposed changes most significantly affect the thresholds applicable to low-frequency (“LF”) cetaceans, especially for LF sound sources. Sound produced by offshore oil and gas exploration and development activities is predominately LF, yet these proposed changes are being undertaken without any meaningful comment from the industry to which they are most relevant. Moreover, as indicated in our previous comments, our industry has continued to support relevant independent peer-reviewed science via the E&P Sound and Marine Life Joint Industry Programme (“JIP”). See <http://www.soundandmarinelife.org/>. Scientific results from JIP-funded independent research has and can continue to inform this process of developing meaningful criteria so long as the process is transparent, flexible, and consistent with the best available science.

(. . . continued)

and, therefore, to a peer review requirement. Moreover, “influential scientific, financial, or statistical information” is specifically held to higher information quality standards. See 67 Fed. Reg. at 8452, 8455 (“OMB guidelines apply stricter quality standards to the dissemination of information that is considered ‘influential.’”).

III. CONTENT COMMENTS

A. The Proposed Changes Applicable to LF Cetaceans Are Arbitrary and Contrary to the Best Available Science

The proposed changes to the LF cetacean weighting function parameter ‘*a*’ are scientifically unjustified and do not fit the models that NOAA references as support for these changes. As described below, the auditory curve and weighting functions that result from NOAA’s proposed model exhibit an anomalous LF slope that differs from all other marine mammal, human, and other mammalian hearing curves, as well as from the slopes of both the rejected and cited references for modeling hearing in LF cetaceans.

NOAA recognizes that “[m]ost mammals for which thresholds have been measured have low-frequency slopes ranging from 30-40 dB/decade.” Accordingly, the audiogram, and therefore the weighting function, should change from zero dB at 1 kHz to 30-40 dB at 100 Hz, and 60-80 dB at 10 Hz. However, instead of using the data that NOAA acknowledges are most accurate, NOAA proposes the “most conservative” metric by arbitrarily halving the data-supported metric to arrive at the proposed 20 dB/decade slope. The significance of this proposal, and its departure from the best available information, is readily depicted in Figure PC1,⁵ which clearly shows that the NOAA-proposed slope differs significantly from the two sources referenced by NOAA (Cranford and Krysl 2015; Houser et al. 2001). At 100 Hz, NOAA’s new proposal predicts hearing that is only 10 dB worse than best hearing, whereas both the Cranford and Houser models predict decrements of 25-35 dB at the same frequency. The slope of the proposed curve from 1000 to 10 Hz is less than 20 dB/decade, but the slope of the Cranford and Houser models is approximately 25 dB/decade. NOAA’s proposed departure from the best science is also highlighted in Figure PC2,⁶ in which the slope of the left side of the LF cetacean curve stands out as an anomaly compared to the other slopes presented in Figure PC2.

Another anomalous consequence of the LF cetacean slope proposed by NOAA is that there is no point at which LF cetacean hearing crosses the stated 80 dB range above best hearing. In other words, the proposed model provides no lower limit for whale hearing. Our graph demonstrates this anomaly (Fig. 1).

⁵ NOAA Proposed Changes: DRAFT Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. Mar. 2016.

⁶ NOAA Proposed Changes: DRAFT Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. Mar. 2016.

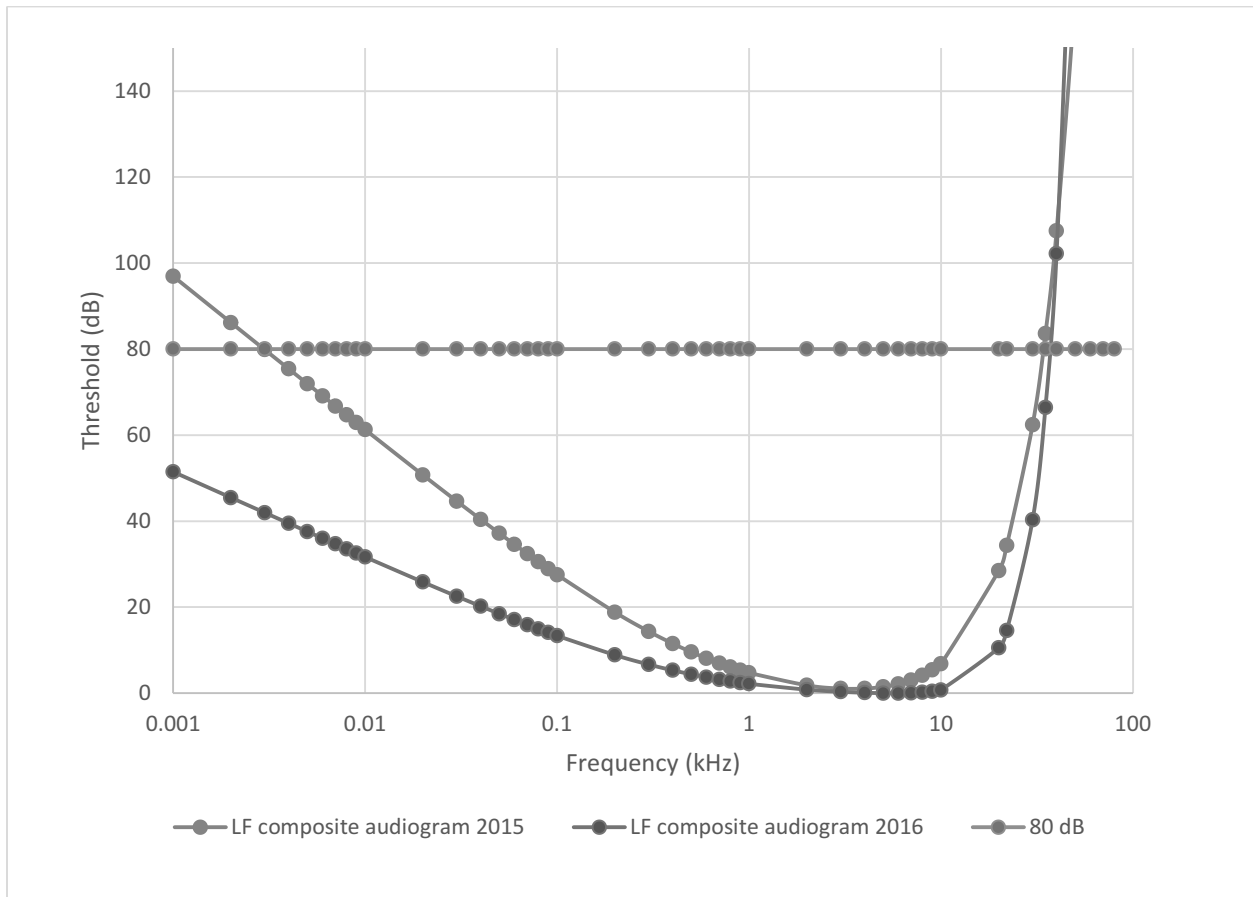


Figure 1. The consequence of the proposed changes to the LF cetacean modeled audiogram (in red) produce a hearing curve at the lowest frequencies that never approaches the 80 dB decrement from best hearing (in green) that NOAA had set as the upper and lower limiting frequencies of hearing (also a general mammalian metric of upper and lower hearing limits). The July 2015 modeled hearing curve (in blue), on the other hand, produces a crossing point with the 80 dB threshold at 3 Hz that provides a reasonable if generous lower limit of hearing.

In addition, on page 7 of the 2016 proposed changes, NOAA reviews four models for frequencies of best hearing and states that these models predict “thresholds within ~40 dB of best sensitivity as low as ~30 Hz and up to 25 kHz.” However, rather than use the predictions of these models, NOAA proposes a curve that predicts LF cetaceans can hear 30 Hz at 10 dB above best hearing, not 40 dB. Under NOAA’s model, whales could even hear sound at 10 Hz with only a 25 dB decrement from best hearing—which the best available science for baleen whale hearing modeling (*e.g.*, Houser et al. 2001; Cranford and Krysl 2015) and general mammalian hearing data strongly suggests is impossible. *See infra* footnote 8.

The impact of the new LF cetacean parameters is immediately obvious in our Figure 2 below, which compares Figure PC3⁷ of the new 2016 criteria (*see right plot below*) with the curve depicted in NOAA 2015 Draft Guidance (page 12) (*see left plot below*). In contrast to the similar shapes of all the 2015 weighting functions, the new LF cetacean curve produces a biologically unrealistic, extended, and flattened curve.

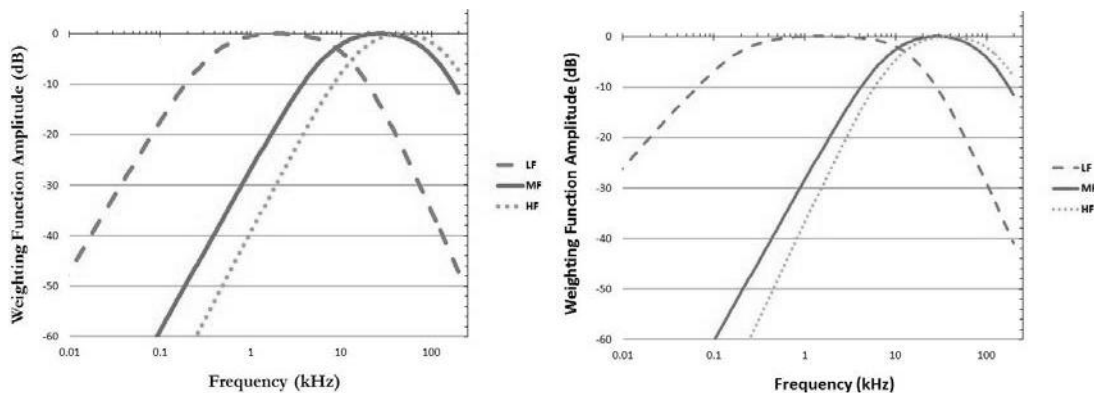


Figure 2. The left plot shows initial July 2015 cetacean weighting functions: LF in dashed blue, MF cetacean in red and HF cetacean in dotted black. While the frequency range of best hearing for LF cetaceans is conservatively generous given uncertainties in the models, the slope of the weighting functions are all parallel, consistent with what is generally observed across mammalian hearing and weighting functions. The right plot shows that the modified March 2016 weighting functions not only create a much broader and obviously unrealistic span of best hearing (the flat upper part of the curve normalized to zero), but also provide a slope of increased weighting (decreased hearing ability) at the lower frequencies that is clearly out of alignment with the measured decrement of hearing acuity in all other marine mammals, as well as for mammals in general, including other LF specialist species.

NOAA's proposed LF cetacean model also sharply deviates from data pertinent to other LF specialist mammals. For example, humans are LF hearing specialists that have a best hearing range of approximately 400 Hz to 16 kHz.⁸ But, unlike the LF cetacean model proposed by NOAA, human hearing ability is 25 dB below best hearing at 200 Hz—not the 10 Hz value generated by NOAA's proposed hearing curve. As another example, the kangaroo rat (another LF hearing specialist) has best hearing that starts to diminish at approximately 500 Hz. By 100 Hz, the kangaroo rat's hearing threshold is at least 10 dB above best hearing, and at 20-30 Hz is

⁷ NOAA Proposed Changes: DRAFT Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. Mar. 2016.

⁸ A comprehensive summary of human hearing data can be viewed here: http://www.iso.org/iso/catalogue_detail.htm?csnumber=34222, which includes reference to the seminal Fletcher and Munson curve (JASA 5, 82-108;1933).

40-60 dB above best hearing.⁹ In contrast, under NOAA’s proposed LF cetacean model, whale hearing at 30 Hz is still within 10 dB of best hearing (1 kHz)—even though every other LF specialist mammal experiences an increase in threshold of more than 40 dB across the same frequency span. It is contrary to best available science to have a model that predicts a slope for LF hearing fall-off that is far flatter than that of any other mammal, and that does not predict an LF limit for the auditory system at all.¹⁰

Overall, NOAA’s proposed changes result in unsupported conclusions that LF cetaceans are able to hear a broader range of frequencies at lower sound levels, compared to the 2015 version of the Draft Guidance. These changes will result in significantly longer ranges to potential permanent threshold shift (“PTS”)/temporary threshold shift (“TTS”; *see infra* Section III.C) thresholds. When coupled with other unrealistic changes such as the slope of the LF hearing and weighting curves (discussed above) and the application of high-frequency (“HF”) specialist harbor porpoise dynamic range data to the LF cetacean group, the new criteria result in unrealistic thresholds of PTS risk and ranges that are approximately up to eight times greater than those produced by the peer-reviewed July 2015 Draft Guidance (based on modeling scenario results with previous guidance thresholds and some initial calculations with the 2016 changes conducted within the limited time allotted for public comments).

More generally, NOAA’s approach to statistical uncertainty results in unrealistic conclusions because NOAA makes improbably conservative assumptions at each step of the analysis, and these compounded assumptions accumulate substantial errors in the end result, as is apparent with the proposed LF cetacean model. These erroneous assumptions are further compounded by the absence of empirical data and by NOAA’s failure to test confidence in its curve fitting of non-linear relationships between data input and weighting functions. It is not apparent that NOAA has used any of the acceptable methods to account for limited data, such as those that have been suggested in public comments submitted on the previous versions of the Draft Guidance. In sum, the Associations object to the proposed changes to the LF cetacean criteria because they are not supported by the best available science and are the result of extrapolated conjecture based upon arbitrary and unsupported assumptions.

⁹ See Shaffer, L.A. and G.R. Long. 2004. Low-frequency distortion product otoacoustic emissions in two species of kangaroo rats: implications for auditory sensitivity. *J. Comp. Physiol. A* (2004) 190:55-60.

¹⁰ We agree with NOAA’s statement that the frequency structure of an animal’s vocalizations is not a good predictor of hearing sensitivity. The fact that blue whales, fin whales, and other baleen whale species may produce sound below 100 Hz should not be construed to mean that those are the frequencies of best hearing.

B. The Proposed Changes Applicable to Phocid (“PW”) Pinnipeds Are Arbitrary and Unexplained

NOAA has proposed similar changes to the PW pinniped parameter ‘*a*’. These proposed changes are apparently due to the elimination of some data points, the reasons for which are not clearly explained. NOAA begins by stating that it is removing datasets containing “individuals with hearing loss” and individuals with hearing “not representative of their functional hearing group.” However, neither of these reasons is the stated basis for the removal of four of the five peer-reviewed datasets. Instead, NOAA states that it has removed those datasets “due to high thresholds likely being masked.”

NOAA provides no explanation for why these data are believed to suffer from masking-related issues more significantly than any other audiogram data used to support the Draft Guidance. As NOAA knows, masking is a common problem when conducting studies to develop audiograms, and the degree to which it is controlled can vary considerably from one study to the next. Before removing the data, NOAA must provide a specific explanation for why these particular datasets contain unique masking problems that are unlike the other datasets upon which the Draft Guidance relies.

C. The Proposed Changes Applicable to Peak Sound Pressure Acoustic Threshold Levels Are Partially Acceptable but Contain Serious Flaws

We generally agree that removal of SPL_{peak} acoustic threshold levels for non-impulsive sounds is reasonable as it would be quite rare that continuous sounds would have a peak level that causes potential impacts at distances greater than the SEL_{cum} metric would predict. We also support NOAA’s proposal to adopt the national and international standard of dynamic range as the difference between the auditory threshold and the threshold of pain.

However, the specifically proposed changes to parameter ‘*K*’—a metric of hearing dynamic range—are arbitrary and not based on a rigorous scientific rationale. The creation of a new TTS threshold for LF cetaceans by averaging the MF cetacean TTS threshold with the clearly anomalous and unique porpoise TTS threshold is not a science-based decision, but one designed to introduce added “precaution” to a dynamic range substitute (*i.e.*, TTS) that already contains multiple conservative assumptions relative to the normative human dynamic range definition.

The onset of TTS is not the same as the onset of pain. In fact, TTS was adopted as a measurable metric of marine mammal hearing upper limits specifically because it fell below the levels associated with PTS and pain in humans. The difference between TTS onset in humans and onset of pain is about 40 dB (Melnick 1991¹¹), and it is reasonable to expect that the

¹¹ Melnick, W. 1991. Human temporary threshold shift (TTS) and damage risk. J. Acoust. Soc. Am. 90(1), July 1991.

difference would be the same or greater for marine mammals, given the shorter durations of exposure and lower levels of induced TTS used in marine mammal TTS standards relative to human TTS standards. For these reasons, the MF cetacean dynamic range metric in the 2015 version of the Draft Guidance already represented a compromise to err on the side of caution. Application of the hybrid weighting function is unwarranted for LF cetaceans. We would also point out that substitution of this same MF/HF hybrid weighting function is unnecessary for both pinniped groups (PW and OW), since they both possess sufficient data within their own taxonomic group (*e.g.*, Kastak et al. 2005¹²) to support a dynamic range metric based on their own data as set forth in the July 2015 Draft Guidance, without having to resort to the unwarranted generation of a dynamic range metric based on a scientifically unjustifiable averaging of two very different hearing groups.

D. NOAA’s Proposal to Move White-Beaked Dolphins from the MF Cetacean Group to the HF Cetacean Group Lacks Sufficient Supporting Data and Analysis

NOAA provides no substantive explanation for its conclusion that the white-beaked dolphin’s audiogram is “more similar” to other HF cetaceans (*e.g.*, harbor porpoise). At a minimum, it would have been reasonable for the agency to provide a figure comparing the two audiograms, along with a discussion of the differences between the auditory evoked potential-derived white-beaked common dolphin audiogram and the behaviorally derived harbor porpoise audiograms. NOAA also fails to provide the actual parameter estimates for the revised composite audiograms. Although NOAA does provide the parameter estimates for the weighting function derived from the revised composite audiogram, and these may be used to infer what changes were made, the lack of disclosure of a complete revised analysis, with comparisons, makes it essentially impossible to meaningfully assess the differences, and comment on them.

E. NOAA’s Proposed Update of the HF Cetacean Audiogram Lacks a Sufficient Explanation

We generally agree that it is appropriate to add another audiogram to derive a composite audiogram for the HF cetacean hearing group. However, again, NOAA fails to provide the parameter estimates for the updated HF audiogram, which makes it impossible to conduct a meaningful comparison to the 2015 Draft Guidance within the 14-day comment period. As with essentially all the changes NOAA has proposed, the agency has provided incomplete information and failed to present clear comparisons between the 2015 Draft Guidance and the currently proposed revisions.

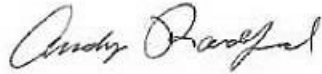
¹² Kastak, D., B. Southall, R. Schusterman, and C. Kastak. 2005. Underwater temporary threshold shift in pinnipeds: Effects of noise level and duration. *J. Acoust. Soc. Am.* 118(5), Nov. 2005.

IV. CONCLUSION

We are genuinely disappointed that what was a constructive process involving meaningful public input has been supplanted with the abrupt issuance of arbitrary conclusions resulting from NOAA's election to prioritize speedy, unilateral, and rash decision-making above transparency, diligence, and adherence to best science. As set forth above, we cannot support the adoption of the 2016 proposed changes, particularly when the changes modify criteria that were already peer reviewed and subject to a reasonable public review and comment period. We urge NOAA to correct this failure of process, policy, and science by re-engaging in an appropriate process, as recommended in Section I *supra*, to incorporate any changes to the 2015 Draft Guidance that may be necessary.

Should you have any questions, please contact the undersigned at 202.682.8584, or via email at radforda@api.org. Thank you for considering and responding to these comments.

Sincerely,



Andy Radford
American Petroleum Institute
Sr. Policy Advisor - Offshore



Nikki Martin
International Association of Geophysical Contractors
President



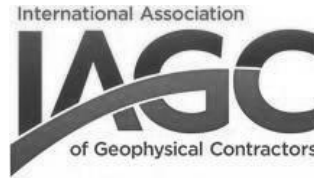
Josh Kindred
Alaska Oil and Gas Association
Environmental Counsel



Jeff Vorberger
National Ocean Industries Association
Vice President, Policy and Government Affairs

cc: U.S. Senate Committee on Energy and Natural Resources
U.S. House Committee on Natural Resources
Dr. Jill Lewandowski, BOEM, Division of Environmental Assessment Chief

ATTACHMENT F



September 9, 2016

VIA Email

Dr. Jill Lewandowski
Chief, Division of Environmental Assessment
Bureau of Ocean Energy Management

Ms. Jolie Harrison
Chief, Permits and Conservation Division
National Marine Fisheries Service

Re: Draft G&G Monitoring Plan Concept for Marine Mammals in the Gulf of Mexico

Dear Dr. Lewandowski & Ms. Harrison:

We write on behalf of the American Petroleum Institute (“API”) and the International Association of Geophysical Contractors (“IAGC”) (together, the “Associations”) to provide the Bureau of Ocean Energy Management (“BOEM”) and the National Marine Fisheries Service (“NMFS”) (together, the “Agencies”) with our recommended draft concept for a Monitoring Plan (“MP”) for marine mammals in the Gulf of Mexico (“GOM”). The MP, as described in the attached concept paper, would both (i) accommodate the monitoring necessary to satisfy NMFS’s obligations under the Marine Mammal Protection Act (“MMPA”) with respect to the forthcoming incidental take regulations (“ITRs”) for geophysical surveys in the GOM, and (ii) advance a framework for the efficient compilation, review, and adaptive management response for a wide variety of monitoring data and information relevant to GOM marine mammal species of interest and marine mammal responses to sound from oil and natural gas geological and geophysical (G&G) activities. Respectfully, we believe this draft concept for the MP and associated draft framework will benefit marine mammals in the GOM, the interested public, the regulated industry, and the Agencies in carrying out their respective missions.

The Associations have a strong interest in environmental monitoring; both to better understand the environment in which our members work, but also to mitigate potential risks to living marine resources. The Associations support efforts that improve the quantity and quality of information related to determining the nature and magnitude of the effects of offshore G&G activities on marine mammals. Such information assists with performing accurate incidental take MMPA authorizations, developing appropriate mitigation measures to minimize incidental take, and correctly assessing the type and amount of incidental take that occurs in the course of

ATTACHMENT F

G&G operations. In this light, the Associations support both ongoing and future research endeavors by industry and its partners related to determining and mitigating the effects of G&G activities on marine life in the GOM. We also support agency efforts to improve the collection and use of the best available science consistent with the requirements and limits of the MMPA.

Nonetheless, the Associations have expressed concern on multiple occasions that the Agencies' envisioned monitoring requirements for the forthcoming ITRs for geophysical surveys in the GOM will exceed the authority granted to NMFS. In response to BOEM's November 7, 2014 "Request for Information on the Development of a Long-Term Monitoring Plan for Marine Mammals," which described an expansive monitoring plan for the GOM ITRs, the Associations submitted a letter detailing our objections to and concerns about the described plan. In our letter, among other things, we explained in detail that the MMPA does not authorize NMFS to require as a condition of a Letter of Authorization ("LOA") the preparation or development of a large-scale, expansive monitoring plan that reaches beyond the time and area in which site-specific activities are undertaken or the performance of actions related to such a plan. We reiterated this concern in a letter dated June 24, 2015, and in several meetings with Agency staff. The letters are attached for your reference.

In our efforts to assist the Agencies' work toward the final GOM ITRs, we have also previously provided proposed language that could be included in the documents developed during the process of preparing the ITRs. Those materials are attached again for your reference. Specifically, we have provided language that could be included in BOEM's petition to NMFS requesting the ITRs and in the Draft Programmatic Environmental Impact Statement that will evaluate the ITRs. In these materials, we have drawn a clear distinction between the type of monitoring that the Agencies may require as a condition of LOAs and other, broader research and monitoring efforts that cannot be required of LOA applicants under the MMPA.

Despite these concerns, we have also indicated that the Associations and their members are willing to work with the Agencies to identify, apart from any requirements in the ITRs, broader monitoring and data collection opportunities that facilitate a greater understanding of the potential effects of sounds produced by G&G activities on marine mammals in the northern GOM. In this light, we have developed the attached draft concept for an MP to initiate a mutually beneficial path forward.

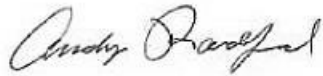
Consistent with the comments above and our prior communications with the Agencies, the attached MP concept paper describes a plan that distinguishes between two elements of monitoring: (1) site-specific monitoring and reporting for individual LOAs under the monitoring framework established in the ITRs, and (2) additional efforts not required as a condition for obtaining an LOA that may inform future ITRs or the terms included in LOAs under the forthcoming ITRs. The MP concept paper also presents a draft framework that would provide for the compilation, review, and adaptive integration of resultant data and information developed under each of those two elements, as well as development of goals, an annual MP review, and

Draft Monitoring Program Concept
September 2, 2016
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appropriate refinements through a collaborative adaptive management process between our members and the Agencies.

As always, the Associations look forward to productively working with the Agencies throughout the development of the GOM ITRs. In particular, we look forward to discussing the attached MP concept paper and potential path forward with the Agencies. We ask that you please contact the signatories below (Andy Radford, radforda@api.org or 202.682.8584) and Nikki Martin (nikki.martin@iagc.org or 713.957.5068) as soon as possible to schedule a meeting in the very near future to discuss the MP concept paper.

Sincerely,



Andy Radford
American Petroleum Institute
Sr. Policy Advisor - Offshore



Nikki Martin
International Association of Geophysical Contractors
President

Attachments

cc: Walter Cruickshank, Deputy Director, BOEM
Jennifer Bosyk, Division of Environmental Assessment, BOEM
Tamara Arzt, Division of Environmental Assessment, BOEM
Donna Wieting, Director, Office of Protected Resources, NMFS
Ben Laws, Office of Protected Resources, NMFS

ATTACHMENT F

Draft Concept for Gulf of Mexico G&G Monitoring Program

NMFS is expected to propose Incidental Take Regulations (ITRs) for geological and geophysical (G&G) surveys in the Gulf of Mexico (GoM) under the Marine Mammal Protection Act (MMPA), in response to a forthcoming petition for such ITRs from BOEM. In this context, the federal agencies and industry recognize the importance and value of both (i) monitoring and mitigation required of individual operators specific to the activity for which incidental take is authorized under a Letter of Authorization (LOA), and (ii) data collection, aggregation and analysis performed outside of the ITR framework. This document describes, for further discussion with NMFS and BOEM, a draft concept for a GoM G&G Monitoring Program (MP) that would establish a framework for managing both the data obtained through required monitoring from LOA holders and the information generated outside of the ITR framework, including the collection, aggregation, review, reporting, and use of data and information, as described below..

1. GoM G&G Monitoring

a. Monitoring and Reporting Under ITRs/LOAs

We expect the forthcoming ITRs to include monitoring and reporting requirements intended to require that each LOA holder: (1) provide information about the specific impacts of the incidental take authorized under a particular LOA and the related underlying activity, and (2) provide information that informs the assessment of the overall impact of the incidental take authorized under the regulations. These monitoring and reporting requirements, in and of themselves, would satisfy the statutory requirements applicable to the ITRs. The monitoring and reporting requirements included in each LOA may require, for example, the documentation of: (1) observations of the number of marine mammals potentially affected by the specified activity, including species identification, location observed, date and time of the observation, and, if possible, whether juvenile or adult, sex, and group size of the observed marine mammal(s); (2) behavioral reactions, if any, of the observed marine mammal(s) to the specified activity; and/or (3) other data that directly inform the question of whether, and if so, to what degree, marine mammal populations addressed in the regulations may be affected by the incidental take authorized by LOAs. We also expect that the ITRs will establish an adaptive management framework through which the monitoring requirements included in LOAs may be tailored based on the best available information and empirical learnings, consistent with the terms of the ITRs.

b. Efforts Beyond Monitoring and Reporting Under ITRs/LOAs

Beyond and separate from obligations under the MMPA, through a framework such as the one proposed below, additional efforts would identify, prioritize and manage any agreed upon additional data collection and analysis efforts. These efforts would not be included in the ITRs and would not be required as a condition for obtaining an LOA. Oil and gas operators and geophysical contractors would, as appropriate, help identify and participate in broader opportunities that would facilitate a greater understanding of how marine mammals in the GoM region may be affected by sounds from G&G activities. These opportunities could include relevant industry data collection and research, government

data collection, analysis, and research, and collaborative efforts among industry, the federal government and other parties. Data and information collected in efforts beyond required monitoring may include, but would not be limited to, marine mammal physiological and/or behavioral data, and data related to the basic distribution, abundance, and habitat use of marine mammal species.

2. Monitoring Program Framework

The MP would include a framework that addresses the two distinct monitoring elements described above. This framework would allow for the compilation, review, and adaptive integration of resultant data and information from these monitoring elements. The specific details of the MP framework, including reporting mechanisms, infrastructure needs and a process for ongoing coordination would be developed during initial MP start-up meetings between industry representatives and the responsible federal agencies (*i.e.*, BOEM, NMFS).

a. Reporting, Review, and Recommendations

In general, the MP framework would include mechanisms for the consideration of reports, aggregation, reviews, and other information and data generated by the regulated industry and responsible regulatory agencies. The MP framework would also establish an annual data and information exchange and discussion (Annual Review) between the regulated industry and responsible regulatory agencies on the following components:

- mandatory and standardized data reports provided by individual LOA holders under the ITRs;
- aggregation and analysis of those mandatory reports into an annual summary dataset of LOA-holder monitoring and mitigation; and,
- a review of other relevant activities undertaken by industry, the federal government, or other parties over the preceding year.¹

Collectively, these components would form the basis of an adaptive management plan for the succeeding year(s) that may result in changes to the LOA-holder monitoring and mitigation requirements (consistent with the ITRs) based on lessons learned from preceding years of monitoring in the GOM or in changes to the monitoring requirements of future ITRs. Additionally, the Annual Review would inform planning to address mutually identified high priority information gaps, data needs, or potential technological innovations through efforts outside the scope of the ITRs. Each Annual Review would enable the assessment of relative benefits and costs of monitoring and mitigation requirements previously placed upon individual LOA holders, allowing for future adjustments to LOA requirements consistent with the terms of existing ITRs or as reflected in changes to future ITRs.

Similar to the existing research and monitoring programs, public information, reports, adaptive management plans, etc. could be made available and archived on a dedicated website. Additionally,

¹ For example, the Sound and Marine Life Joint Industry Program (SAML JIP) regularly conducts multi-partner research and data collection, publicly reported on its website, www.soundandmarinelife.org, that is relevant to the mitigation of environmental risk in the GoM from industry activities.

appropriate items could be subject to an external or public review process. Any final products (*i.e.*, reports, adaptive management plans, etc.) should be made available for public review.

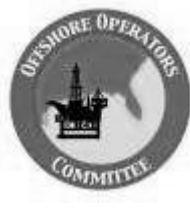
b. Goals and Metrics of Success

The MP would have clear and explicit monitoring goals identified by the regulated industry and regulatory agencies during the initial start-up meetings. The Annual Review would address success or failure in meeting those goals as part of the adaptive management planning process of the MP framework. This process is expected to increase confidence in regulatory decisions and reduce concerns about potential environmental risks. Also, as part of the Annual Review, a monitoring requirement may be evaluated and determined to be impracticable, not feasible with current scientific or technical capabilities, or of limited or no value to the regulatory process, thus freeing resources and effort for emergent questions or rising priorities.

Performance under the MP would depend on available resources and priorities that are affected by factors beyond the control of the regulatory agencies or regulated industry, including but not limited to fluctuations in federal budgets, the fiscal health of the regulated industry, and relevant contributions by other parties (*e.g.*, federal research programs like the National Science Foundation and Office of Naval Research; academic institutions; states; and other industries or GoM user groups, such as commercial fisheries, shipping, military, or other entities).

c. Further Planning and Considerations

Some of the activities considered under the MP would be beyond the means and capabilities of individual LOA holders. As such, to achieve the MP goals would require appropriate trade associations or similar industry-wide coordinating organizations to participate in the MP. These entities need to be identified during initial MP start-up meetings. Other specific MP framework details that need to be addressed include a timeline for industry reporting; data management structure for monitoring data, regulatory agency aggregation and analysis, external expert reviews, and mechanisms for implementing adaptive management decisions.



December 8, 2014

VIA email to monitoringplan@boem.gov

Bureau of Ocean Energy Management
Gulf of Mexico OCS Region & Atlantic Activities
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

Re: Comments on Request for Information on the Development of a Long Term Monitoring Plan for Marine Mammals in the Gulf of Mexico — BOEM-14-0075

To Whom It May Concern:

This letter provides the comments of the American Petroleum Institute (“API”), the Offshore Operators Committee (“OOC”) and the International Association of Geophysical Contractors (“IAGC”) (collectively, the “Associations”) in response to the Bureau of Ocean Energy Management’s (“BOEM”) Request for Information on the Development of a Long Term Monitoring Plan for Marine Mammals in the Gulf of Mexico (the “Request”). *See* 79 Fed. Reg. 66,402 (Nov. 7, 2014). We appreciate BOEM’s consideration of these comments.

The Associations have a strong interest in environmental monitoring, both to better understand the environment in which our members work, but also to mitigate risks to living marine resources. As set forth in more detail below, the Associations support efforts that improve the quantity and quality of information related to determining the nature and magnitude of the effects of offshore activities on marine mammals. Such information is essential for performing accurate incidental take analyses to support Marine Mammal Protection Act (“MMPA”) authorizations, for developing appropriate mitigation measures to minimize incidental take, and for correctly assessing the type and amount of incidental take that occurs in the course of operations. In this light, the Associations support industry’s ongoing and continued research related to determining and mitigating any potential effects of seismic surveys on marine

life in the Gulf of Mexico (“GOM”) and support agency efforts to improve the collection and use of information and use of best available science while also remaining consistent with the requirements and authority of the MMPA. We are not supportive of efforts that will impose requirements on the regulated community beyond the scope of the MMPA.

I. THE ASSOCIATIONS

API is a national trade association representing over 600 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

OOC is a non-profit organization comprised of any person, firm or corporation owning offshore leases and/or engaged in offshore activity as a drilling contractor, service company, supplier or other capacity that chooses to participate. Currently, OOC has 142 member companies. The Committee's activities are focused supporting its member companies in operations that protective of human health and the environment.

API, OOC, IAGC, and our members are longstanding supporters of the MMPA regulatory process as an effective means of balancing responsible offshore exploration activities with the conservation of marine mammals. In addition, as described in more detail below in § II.E, the oil and natural gas and geophysical exploration industries have made a considerable investment in research related to determining and mitigating the effects of seismic surveys on marine life.

II. COMMENTS

A. BOEM Is Not Required to Prepare a “Long Term Monitoring Plan”

As an initial matter, the Request states that BOEM’s contemplated long-term monitoring plan “is a required element of BOEM’s petition for rulemaking under the Marine Mammal Protection Act.” 79 Fed. Reg. at 66,402. However, this statement is demonstrably incorrect as there is no such requirement contained in the MMPA or in any other legal authority. In fact, every statutory and regulatory MMPA provision that refers to “monitoring” does so in the context of the “site-specific” monitoring plans that are required as a condition of incidental take authorizations issued pursuant to MMPA § 101(a)(5). None of those provisions refer to “long term” monitoring. For example, the MMPA regulations require a petition for an incidental take authorization to include, among other things:

The suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species, the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities and suggested means of minimizing burdens by coordinating such reporting requirements with other schemes already applicable to persons conducting such activity. Monitoring plans should include a description of the survey techniques that would be used to determine the movement and activity of marine mammals near the activity site(s) including migration and other habitat uses, such as feeding. Guidelines for developing a site-specific monitoring plan may be obtained by writing to the Director, Office of Protected Resources....

50 C.F.R. § 216.104(a)(13) (emphases added).

Consistent with the requirement to include a “site-specific” monitoring plan in a petition for an incidental take authorization, the MMPA simply requires incidental take regulations to include “requirements pertaining to the monitoring and reporting of such taking.” 16 U.S.C. § 1371(a)(5)(A)(i)(II)(bb) (emphasis added); *see also id.* § 1371(a)(5)(D)(ii)(II) (same description for incidental harassment authorization). The MMPA regulations similarly refer only to monitoring that is limited to the specific incidental take authorized by the agency in a particular authorization. *See* 50 C.F.R. § 216.102(c) (NMFS must prescribe requirements or conditions “pertaining to the monitoring and reporting of such taking”) (emphasis added); 50 C.F.R. § 216.105(b)(3) (referring to monitoring and reporting requirements “for each allowed activity”).¹

Additionally, the settlement agreement reached by the parties in *NRDC et al. v. Jewell et al.*, No. 2:10-cv-01882, Dkt. 118-2 (June 18, 2013, E.D. La.) (“GOM Settlement Agreement”) does not require BOEM to develop a long-term monitoring plan. In the GOM Settlement Agreement, the Federal Defendants simply agreed “to analyze in any EIS or EA for BOEM’s MMPA Application the development of a long-term adaptive monitoring plan that addresses potential cumulative and chronic impacts from seismic surveys on marine mammal populations in the Gulf of Mexico.” *Id.* § IX.B (emphasis added). In other words, BOEM did not agree to develop a plan, just to analyze the development of one. Moreover, as addressed above, the MMPA does not authorize (i) NMFS to require the development of a long-term monitoring plan as a condition of an incidental take authorization or (ii) BOEM to undertake development or implementation of a long-term monitoring plan as part of a MMPA § 101(a)(5) petition. The GOM Settlement Agreement does not and cannot legally authorize BOEM or NMFS to take actions that are not otherwise allowed by law. *See United States v. Carpenter*, 526 F.3d 1237,

¹ Indeed, in the nearly two-decade history of the issuance of incidental take authorizations in the Beaufort and Chukchi Seas, no federal agency has ever imposed an obligation to prepare a long-term monitoring plan or to take any action related to such a plan.

1241-42 (9th Cir. 2008) (terms in settlement agreement may not “violate the civil laws governing the agency”).²

In sum, there is no requirement for a petitioner under MMPA § 101(a)(5) (BOEM, in this instance) to prepare a long-term monitoring plan and there is no legal authorization for NMFS, as the agency authorizing incidental take, to require as a condition of an authorization the preparation or development of a long-term monitoring plan or the performance of actions related to a long-term monitoring plan. Accordingly, although the Associations support efforts to improve the quantity and quality of information related to determining the nature and magnitude of the effects of geophysical exploration activities on marine mammals and use this information to make informed decisions, we are not supportive of efforts that will impose requirements on the regulated community beyond the scope of the MMPA.

B. BOEM Should First Consider Extensive Existing Information

Notwithstanding our comments above, should BOEM pursue a long-term monitoring program for marine mammals in the GOM, it should first consider the large volume of data and information that has already been collected but remains unanalyzed due to the unavailability of sufficient resources. A complete assessment of these existing data sets should first be conducted to ensure that existing and relevant information is utilized to the fullest extent practicable.

For example, the current protected species observer program in the GOM provides BOEM and the Bureau of Safety and Environmental Enforcement (“BSEE”) with important information that could be used more meaningfully by the agencies to determine, among other things, species density and their occurrence during ramp-up, full operation, and when no sound source is active. The current program requires sighting reports for each marine mammal or sea turtle observed during operations and those reports must include information regarding species present, group size, direction in relation to the vessel, and behavior – and could be bolstered to collect other key data that would allow proper geospatial and sighting condition dependent analysis of observer effort and sightings.³ This data should also be more readily shared with stakeholders. Additionally, G&G permits issued since June 2013 must comply with the terms of the GOM Settlement Agreement, which imposes interim additional mitigation and monitoring measures, including the use of passive acoustic monitoring during periods of low visibility,

² This is consistent with the position of the Intervenor-Defendants in *NRDC v. Jewell*, who expressly stated that they “do not agree that all of the measures described in paragraph[s] IX.A and IX.B are feasible or appropriate.” See GOM Settlement Agreement § IX.D. Both API and IAGC are Intervenor-Defendants in the *NRDC v. Jewell* litigation. NMFS is not a party to the *NRDC v. Jewell* litigation.

³ All on-lease and off-lease geophysical and geological (“G&G”) surveys in the GOM must comply with the requirements of Joint Notice to Lessees No. 2012-G02 for Seismic Survey Mitigation Measures and Protected Species Observer Program. These mitigation measures include, among other things, ramp-up procedures, visual monitoring, shutdown for all marine mammals except dolphins within a 500-meter exclusion zone, and reporting requirements.

extended shutdown requirements for manatees, and the submittal of bi-weekly reports to BSEE. This required reporting is another source of valuable information that has not been fully utilized by the agencies.

The monitoring and reporting requirements that have been implemented over the years have generated a significant amount of information, but from the regulated community's perspective, that information does not appear to have been meaningfully analyzed, organized, or otherwise put to productive use by federal agencies. We suggest that an initial effort be made to understand the existing data and information — i.e., who is collecting it, why is it being collected, where is it being collected, where is it stored, and what is its content. It may also be useful to generate a visual representation showing specifically where the data are currently collected, including temporal, spatial and parameter elements, and use this map to identify gaps in monitoring. Such an effort could be followed by a meaningful analysis of how the currently collected data and information can be organized and used to inform future decisions.

C. Considerations for an Effective Monitoring Program

As stated above, the Associations support efforts to improve the quantity and quality of information related to determining the nature and magnitude of the effects of offshore activities on marine mammals so long as those efforts are consistent with applicable law. To the extent that BOEM plans to design a monitoring program that complies with the MMPA and will not impose unauthorized requirements on the regulated community, we offer the following considerations.

1. A monitoring program should establish clear and straightforward goals that help guide and bring focus to all efforts conducted as a part of the program. These could include the collection of basic, baseline distribution, abundance, and density information for GOM marine mammal species that are of most concern. A component of the program could also focus on the measurement of GOM ambient sound levels and anthropogenic sound.
2. A monitoring program should include an adaptive management component that is based upon the best available scientific information and assessment of relevant risks and is used to forecast emerging conditions for response and efficacy of mitigation measures industry applies.
3. A monitoring program should provide flexibility for adaptive technology and methodology, such as remote visual and passive acoustic monitoring, infrared technology, and active acoustics. The industry has worked with BOEM, NMFS, and BSEE for years in the GOM and other OCS regions, field testing different monitoring technologies and reporting their results.
4. A monitoring program should use updated reporting forms that capture substantive data from observations to substantiate the implementation of appropriate mitigation measures. For example, Technical Memorandum NMFS-OPR-49, *National Standards for a Protected Species Observer and Data Management Program: A Model Using Geological and Geophysical Surveys*, recommends that agencies implement “standardization including data collection methods, standardized electronic forms, and software used in collaboration with

NMFS and non-federal stakeholders.” In comments submitted May 2, 2014, the Associations agreed with this recommendation and reaffirm it here.

Collaboration with NMFS should result in a reporting form that produces data the agency can use and rely upon to assess population numbers, stock assessments, and effects on marine species. The Associations also note that best practices implemented by industry already recommend the use of a standard reporting form developed under a project funded by the Exploration and Production (“E&P”) Sound and Marine Life Joint Industry Program.⁴ In addition, these reporting forms are recommended for use by the United Kingdom’s Joint Nature Conservation Committee (<http://jncc.defra.gov.uk/page-1534>). The Associations are sincerely interested in working with the agencies to update the current reporting forms.

5. Data generated from the monitoring program should be contributed to a publicly available database, such as OBIS-SEAMAP, so that the data are readily available to other government agencies, industry, researchers, and the public. Data and metadata should meet widely accepted standards.

6. Data analysis and synthesis must be a clear and explicit priority in a monitoring program. The plan for how, when, and to what purpose this data analysis will occur should be specifically stated and resources must be provided to support this analysis.

7. An effective monitoring program should be properly scoped to address relevant geographic areas and the activities within those areas. For example, because marine mammals are not restricted to just U.S. jurisdictional waters, BOEM should explore opportunities to partner with Mexico on monitoring projects. Additionally, a marine mammal monitoring program that focuses only on G&G activities, and does not account for other industries active in the GOM, would result in a piecemeal approach to long-term monitoring. Observed patterns in monitoring data can be explained by a number of factors that would not be accounted for in a monitoring plan focused solely on G&G activities.

8. BOEM should consider funding research to further the development of the “Population Consequences of Disturbance” framework, using the key data referred to above. *See* <http://www.smru.co.uk//pcod>, <http://www.onr.navy.mil/reports/FY11/mbfleish.pdf>.

⁴ *See* Barton, Carolyn J.S., Jaques, Robert, and Mason, Mike. 2008. Identification of Potential Utility of Collation of Existing Marine Mammal Observer Data. RSK Environmental Ltd., Cheshire, UK. The Marine Mammal Recording Form can be accessed at: <http://www.soundandmarinelife.org/research-categories/mitigation-and-monitoring/collection-and-analysis-of-existing-marine-mammal-observer-mmo-data.aspx>.

9. IAGC also recently provided suggested studies programs to BOEM, including marine mammal spatial density maps and research concerning the Bryde's whale (a baleen whale species that has been petitioned for listing under the Endangered Species Act).⁵

D. Any Effect of Seismic Surveys on Marine Mammals is Negligible

The best available scientific data and information demonstrate that the mitigation measures applied to offshore operations in the GOM is already more than adequate to protect marine mammals and sea turtles in a manner consistent with federal law. Insofar as we are aware, no seismic activities (in the GOM or anywhere else) have caused impacts amounting to anything more than temporary changes in behavior, without any known injury, mortality, or other adverse consequence to any marine mammal species or stocks. *See, e.g.*, the following sources:

- BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Eastern Planning Area Lease Sales 225 and 226*, at 2-22 (2013), <http://www.boem.gov/BOEM-2013-200-v1/> (“Within the CPA, which is directly adjacent to the EPA, there is a long-standing and well-developed OCS Program (more than 50 years); there are no data to suggest that activities from the preexisting OCS Program are significantly impacting marine mammal populations.”); *id.* at 2-23 (with respect to sea turtles, “no significant cumulative impacts to sea turtles would be expected as a result of the proposed exploration activities when added to the impacts of past, present, or reasonably foreseeable oil and gas development in the area, as well as other ongoing activities in the area”);
- BOEM, *Final EIS for Gulf of Mexico OCS Oil and Gas Western Planning Area (WPA) Lease Sales 229, 233, 238, 246, and 248 and Central Planning Area (CPA) Lease Sales 227, 231, 235, 241, and 247*, at 4-203 (v.1) (2012), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v1.aspx (WPA); *id.* at 4-710 (v.2), http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/BOEM-2012-019_v2.aspx (CPA) (“Although there will always be some level of incomplete information on the effects from routine activities under a WPA proposed action on marine mammals, there is credible scientific information, applied using acceptable scientific methodologies, to support the conclusion that any realized impacts would be sublethal in nature and not in themselves rise to the level of reasonably foreseeable significant adverse (population-level) effects.”); *id.* at 4-235, 4-741 (“[T]here are no data to suggest that routine activities from the preexisting OCS Program are significantly impacting sea turtle populations.”);

⁵ Provided to BOEM via email dated November 6, 2014. Receipt acknowledged December 2, 2014.

- BOEM, *Final Supplemental EIS for Gulf of Mexico OCS Oil and Gas WPA Lease Sales 233 and CPA Lease Sale 231*, at 4-30, 4-130 (2013), http://www.boem.gov/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2013/BOEM%202013-0118.pdf (reiterating conclusions noted above); MMS, *Final Programmatic EA, G&G Exploration on Gulf of Mexico OCS*, at III-9, II-14 (2004), http://www.nmfs.noaa.gov/pr/pdfs/permits/mms_pea2004.pdf (“There have been no documented instances of deaths, physical injuries, or auditory (physiological) effects on marine mammals from seismic surveys.”); *id.* at III-23 (“At this point, there is no evidence that adverse behavioral impacts at the local population level are occurring in the GOM.”);
- MMS, *Draft Programmatic EIS for OCS Oil & Gas Leasing Program, 2007-2012*, at V-64 (Apr. 2007) (citing 2005 NRC Report), <http://www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Five-Year-Program/5and6-ConsultationPreparers-pdf.aspx> (MMS agreed with the National Academy of Sciences’ National Research Council that “there are no documented or known population-level effects due to sound,” and “there have been no known instances of injury, mortality, or population level effects on marine mammals from seismic exposure ”);
- A. Jochens et al., *Sperm Whale Seismic Study in the Gulf of Mexico: Synthesis Report*, at 12 (2008) (“There appeared to be no horizontal avoidance to controlled exposure of seismic airgun sounds by sperm whales in the main SWSS study area.”);
- *Takes of Marine Mammals Incidental to Specified Activities; Low-Energy Marine Geophysical Survey in the Gulf of Mexico, April to May, 2013*, 78 Fed. Reg. 11,821, 11,827, 11,830 (Feb. 20, 2013) (“[I]t is unlikely that the proposed project [a USGS seismic project] would result in any cases of temporary or permanent hearing impairment, or any significant non-auditory physical or physiological effects”; “The history of coexistence between seismic surveys and baleen whales suggests that brief exposures to sound pulses from any single seismic survey are unlikely to result in prolonged effects.”);
- *Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, May to August 2014*, 79 Fed. Reg. 14,779, 14,789 (Mar. 17, 2014) (“There has been no specific documentation of temporary threshold shift let alone permanent hearing damage[] (i.e., permanent threshold shift) in free ranging marine mammals exposed to sequences of airgun pulses during realistic field conditions.”);
- *Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Seismic Survey in Cook Inlet, Alaska*, 79 Fed. Reg. 12,160, 12,166 (Mar. 4, 2014) (“To date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to air gun pulses, even in the case of large air gun arrays.”).

E. Other Research Efforts and Collaboration Opportunities

For many years, the oil and gas and geophysical exploration industries have made a considerable investment in research related to determining and mitigating the effects of seismic surveys on marine life. That investment continues today. In 2006, a group of international oil and gas companies and the geophysical industry committed to uniting their resources to fund a research program to improve understanding of the potential physical and behavioral effects on marine life from the sound created during the process of finding and producing oil and gas. The E&P Sound and Marine Life Joint Industry Program (“JIP”) is the most extensive industry research program in this field.

The JIP supports research to increase understanding of the effects of sound on marine life generated by oil and gas exploration and production activity and to remove some of the uncertainty about the possible effects of seismic surveys. The research also helps governments make regulatory decisions based on the best science and helps the regulated community develop effective mitigation strategies. The JIP’s research is divided into five categories — from understanding how sound travels in water, to the possible effects of sound on the physical and behavioral well-being of marine life, as well as new technologies and methodologies that might further mitigate hypothetical but as yet poorly understood sources of risk. More information on the JIP is available at www.soundandmarinelife.org.

The JIP has also researched and developed a range of research tools that are used to assist the understanding of the behavior of marine mammals in their environment. These tools include, but are not limited to, animal tracking tags, improved passive acoustic detection, classification and tracking tools, and methodologies for assessing and monitoring subtle behavioral and physiological responses to manmade sound. These techniques have not just helped the JIP in its studies, but have also advanced general scientific knowledge of marine animals. The JIP has also developed PAMGuard, which is software designed to facilitate passive acoustic monitoring of marine mammals at sea in poor-visibility conditions. The Associations strongly encourage BOEM to coordinate its monitoring efforts with the efforts of the JIP.

In addition to the JIP, the following sources contain programs or information that may be helpful to BOEM’s GOM monitoring efforts:

- *National Academy of Sciences Gulf Research Program*, <http://nationalacademies.org/gulf/index.html>.
- *National Oceanographic Partnership Program*, www.nopp.org.
- *NOAA RESTORE Act Science Program*, <http://restoreactscienceprogram.noaa.gov/>
- *National Fish and Wildlife Foundation Gulf Environmental Benefit Fund*, <http://www.nfwf.org/gulf/Pages/home.aspx>


- *US Navy Living Marine Resources (LMR) Program*, <http://www.lmr.navy.mil/Home.aspx>
- *Integrated Ocean Observing System / GOM Coastal Observing System*, <http://gcoos.org/>
- *Cetacean & Sound Mapping (CetSound)*, <http://cetsound.noaa.gov>

III. CONCLUSION

In addition to industry's continued research to understand and mitigate the potential effects of industry activities on marine life in the GOM, the Associations support agency efforts to improve the collection and use of information in support of monitoring and reporting efforts in the GOM within the scope of the MMPA. We appreciate BOEM's consideration of the recommendations set forth above and we strongly encourage the agency to continue to reach out to, and coordinate with, the regulated community should it proceed with the development of a GOM monitoring program.

Should you have any questions, please contact the undersigned at 202.682.8584, or via e-mail at radforda@api.org.

Sincerely,



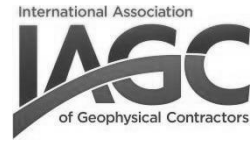
Andy Radford
American Petroleum Institute



Karen St. John
International Association of Geophysical Contractors



Evan Zimmerman
Offshore Operators Committee



June 24, 2015

By Electronic Mail and U.S. First Class Mail

Dr. Walter Cruickshank
Deputy Director
Bureau of Ocean Energy Management
1849 C Street NW
Room 5211
Washington, DC 20240

Samuel D. Rauch, III
Deputy Assistant Administrator for Regulatory Programs
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, Maryland 20910

Dear Sirs:

The American Petroleum Institute (“API”) and the International Association of Geophysical Contractors (“IAGC”) submit this letter as part of our ongoing engagement with the Bureau of Ocean Energy Management (“BOEM”) and the National Marine Fisheries Service (“NMFS”) regarding geological and geophysical (“G&G”) exploration in the Gulf of Mexico (“GOM”). G&G exploration is vitally important to our members and to our nation’s energy needs, and we hope that API and IAGC can continue to serve as valuable partners with BOEM regarding your efforts on this issue.

In particular, we hope to have a productive discussion with you about the petition for an incidental take regulation (“ITR”) addressing the incidental take of marine mammals in the GOM under the Marine Mammals Protection Act (“MMPA”) that BOEM has submitted to the National Marine Fisheries Service (“NMFS”).

I. BOEM’s Petition for Incidental Take Regulation

As you know, BOEM’s predecessor agency submitted a petition to NMFS in 2002 for the issuance of an ITR addressing the incidental take of marine mammals in the GOM.¹ In 2011, BOEM submitted a revised ITR petition to NMFS, for which NMFS accepted public comments.² The 2011 petition requested an ITR covering a five-year period and authorizing the incidental

¹ See 68 Fed. Reg. 9991 (Mar. 3, 2003).

² 76 Fed. Reg. 34,656 (June 14, 2011).

take of 21 species of cetaceans incidental to seismic surveys undertaken for G&G exploration in the GOM.

We recognize that BOEM is now re-amending its petition. We also know that that BOEM published a Request for Information (“RFI”) last November regarding a potential long-term monitoring plan (“LTMP”) “on the potential impacts to marine mammals from [G&G] data acquisition activities, including seismic surveys,” which stated that an LTMP “is a required element of BOEM’s petition for a rulemaking under the [MMPA].”³ In addition, we participated in the webinar for industry stakeholders that BOEM held in March 2015 on this issue.

II. Overview of Comments from December 8, 2014 Letter

API and IAGC, with the Offshore Operators Committee, submitted a letter to BOEM on December 8, 2014, commenting on the November 2014 RFI. While API and IAGC support BOEM’s efforts in principle, we have significant concerns about BOEM’s apparent intention to include an LTMP in its amended petition.

In our December 8 letter, we strongly contested BOEM’s assertion in the RFI that the petition must include an LTMP. As we explained, the MMPA includes no such requirement; to the contrary, every statutory and regulatory reference to monitoring refers to “site-specific” monitoring plans, not long-term monitoring. We also noted that the settlement agreement in *NRDC v. Jewell*⁴ regarding seismic surveying in the GOM does not require BOEM to develop an LTMP. Finally, we explained that there is no legal authority for NMFS to require an LTMP as a condition for authorizing incidental take.

We also provided comments for BOEM to consider in developing a LTMP concept, should BOEM move forward with one. As we explained in significantly greater detail in the letter, in any action to develop an LTMP, BOEM should:

- Assess the voluminous existing and relevant information;
- Establish clear and straightforward goals;
- Include an adaptive management component;
- Provide flexibility for adaptive technology and methodology;
- Use updated reporting forms;
- Contribute generated data to a publicly available database;
- Prioritize data analysis and synthesis;
- Properly scope the program;
- Consider funding research to further the development of the “Population Consequences of Disturbance” framework; and
- Take into account studies programs that IAGC has recommended.

³ 79 Fed. Reg. 66,402 (Nov. 7, 2014).

⁴ Case No. 2:10-cv-01882 (E.D. La.).

Our letter also explained that the best available scientific data and information demonstrate that any effect of G&G activities on marine mammals is negligible, in particular because of the effectiveness of mitigation measures already applied to offshore operations in the GOM. Finally, our letter summarized the many research efforts that our industries have made, and continue to make, with respect to determining and mitigating the effects of seismic surveys on marine life.

III. Requests

API, IAGC, and our respective members are committed to environmental protection and ensuring that G&G exploration is carried out in a responsible manner. Industry's long-standing and ongoing research into these issues reflects those interests. We do not, however, support ineffective, unproductive, or unreasonable requirements, and we have concerns that the contemplated LTMP would include these types of requirement.

In our December 8 letter, we strongly encouraged BOEM to continue its outreach to, and coordination with, the regulated community should it proceed with any marine mammal monitoring program. To BOEM's credit, a series of stakeholder webinars were held in March 2015. During the March webinar, BOEM had stated that they planned to include the monitoring plan in the petition based on assertion from NMFS that such a plan was required. Upon further inquiry during the webinar, NMFS stated that they would provide an explanation of those requirements for the monitoring plan in writing and have since reiterated that commitment (in a call with both associations on June 8). We have not received any follow-up and to that end, by this letter we respectfully request that NMFS provide the promised justification as soon as possible.

In addition, BOEM has stated on number of instances its intention to provide API and IAGC a draft copy of the proposed monitoring plan for review prior to inclusion in the revised petition. We respectfully request that the draft be provided as soon as possible so that industry can have ample time to review and discuss any concern we might have with BOEM.

We appreciate the ongoing cooperation and access to the BOEM and NMFS staffs as we work through the rulemaking process. Should you have any questions, please contact Andy Radford (radforda@api.org, 202-682-8584) or Nikki Martin (nikki.martin@iagc.org, 713-957-5068).

Sincerely,



Andy Radford
American Petroleum Institute



Nikki Martin
International Association of Geophysical Contractors

Proposed Monitoring Language for GOM ITR Petition

The MMPA requires incidental take regulations issued under Section 101(a)(5)(A) to set forth requirements pertaining to the monitoring and reporting of the incidental take authorized under the regulations. The authorization of incidental take occurs through letters of authorization (“LOAs”) issued to specific operators for certain activities. Accordingly, monitoring and reporting of authorized take under the Section 101(a)(5)(A) regulatory framework is accomplished through the imposition of specific requirements identified in LOAs issued to individual operators. These monitoring and reporting requirements are intended to (1) provide information about the specific impacts of the incidental take authorized under a particular LOA and the related underlying activity, and (2) inform the assessment of the overall impact of the incidental take authorized under the regulations.

Each LOA issued under the regulations will include a requirement to monitor and report on marine mammals and any observable reactions they may have to exploration activities. The monitoring and reporting requirements included in each LOA will generally require the documentation of the following information: (1) observations of the number of animals encountered by the exploration activity covered by the LOA, including species identification, location observed, date and time of the observation, and, if possible, whether juvenile or adult, sex, and group size of the observed marine mammal(s); (2) behavioral reactions, if any, of the observed marine mammal(s) to the exploration activity covered by the LOA; and (3) other data that directly inform the question of whether, and if so, to what degree, marine mammals addressed in the regulations are affected by the incidental take authorized by LOAs issued under the regulations. All of the information collected under the terms of LOAs will be reported to the appropriate agencies on a specific schedule to be determined by BOEM and NMFS.

Although a suite of monitoring and reporting measures will be set forth in the incidental take regulations, each LOA issued under the regulations may be tailored to address the specific facts and circumstances of the specific action. LOA applicants will be expected to include details of the specific monitoring and reporting requirements in Marine Mammal Monitoring Plans, and NMFS will coordinate with the applicant to ensure its monitoring and reporting efforts meet applicable standards. *See, e.g.*, 50 C.F.R. § 216.104(a)(13). The goal is to ensure that there is sufficient flexibility built into the regulations to allow NMFS and each applicant to construct an effective monitoring and reporting plan that meets the requirements of the MMPA. For example, if multiple LOA applicants propose concurrent seismic surveys, NMFS will work with the applicants to identify efficient and effective monitoring strategies.

In addition to the monitoring and reporting requirements that will be implemented through the issuance of individual LOAs under the regulations (as described above), BOEM recognizes that it would be useful to collect additional data that address specific science questions that do not directly relate to the potential impacts of the incidental take authorized by LOAs or are not otherwise collected under the terms of LOAs. Such additional data generally include, but are not limited to, marine mammal stock information, marine mammal physiological data, and data related to the basic distribution and habitat use of marine mammal species. While this type of information, and the means of acquiring such information, will not be mandated by the incidental take regulations, industry, BOEM, and NMFS will discuss appropriate additional

scientific monitoring efforts that could be undertaken at the election of LOA applicants. A substantial body of scientific data has been collected by BOEM, academic and other research institutes, and industry from this and other regions over the years, which has helped to inform this rulemaking and any additional steps that are needed to better understand how marine mammals react to anthropogenic sound in the marine environment. For example, these studies have gathered information relevant to sound source characterization and sound propagation, physical and physiological effects, behavioral reactions and biological significant effects, mitigation and monitoring procedures and tools, deep-sea marine animals (SERPENT), sperm whales (BOEM-funded SWSS and SWAPS), other cetaceans and sea turtles (BOEM-funded GULFCET), and the development of transfer functions for the Population Consequences of Acoustic Disturbance Model (PCOD). The goal of any private industry/federal partnership formed to acquire such additional data will be to assess the value of past and existing research and monitoring efforts, avoid redundant studies going forward, and focus on those studies that provide high quality and useful data to inform future decisions.

Finally, the development of the monitoring and reporting requirements that are implemented through the incidental take regulations and LOAs should follow principles of adaptive management through which the requirements included in new LOAs may be modified based on the acquisition of additional information. Accordingly, the identification of additional information, and the methods through which that information is voluntarily acquired, will also be subject to an adaptive process that is informed by new data and information, other research efforts, and input from the scientific and regulated communities. All monitoring and research—whether accomplished through LOA requirements or voluntary efforts—should be based on the best available scientific information, incorporate information generated from past research and monitoring efforts, and be coordinated with other relevant research efforts.

Proposed Language Addressing Adaptive Management for GOM ITR Petition

BOEM recognizes there is significant value in developing and executing a flexible, scalable, and adaptable GoM G&G mitigation and monitoring program. This program should be designed in a manner that accounts for the likely differences among the various G&G activities covered by the regulations (*e.g.*, the technical characteristics of individual projects, their location, time of year, species likely to be present, etc.), while also satisfying the requirements of the MMPA, NEPA, and other applicable law.

The requested incidental take regulations will identify specific measures that may be necessary to mitigate and monitor the anticipated effects of the incidental take authorized through LOAs. The measures will be based upon the best available science and reasonably identifiable as potential means of mitigating and monitoring marine mammal impacts. During the LOA application process, each applicant will, as appropriate, determine whether one or more of the mitigation and monitoring measures identified in the regulations should be included in its LOA application. NMFS will include in each LOA only those measures that are practicable and necessary to accomplish the mitigation and monitoring goals specified in the regulations.

In some instances, there may be a need to include mitigation and monitoring measures in an LOA that are in lieu of, or in addition to, the measures specifically identified in the incidental take regulations. Sufficient flexibility must be built into the regulatory process to allow individual applicants and NMFS to identify any such additional measures. This flexibility is necessary to allow for the inclusion of additional measures that cannot reasonably be identified and assessed when the regulations are issued but that can reasonably be identified and assessed at the time an LOA application is submitted, based on the activity-specific information provided in the LOA application.

Accordingly, BOEM recommends that the incidental take regulations describe: (1) the process for identifying and including appropriate mitigation and monitoring measures from those identified in the regulations in specific LOAs; (2) the process for identifying and including appropriate mitigation and monitoring measures in specific LOAs that are in lieu of, or in addition to, the mitigation and monitoring measures identified in the regulations; (2a) the potential effects from the specified activity for which any such additional measures may be needed; (2b) if feasible, general non-exclusive examples of such additional measures; (2c) the reasons why the additional measures cannot be specifically identified in the regulations; and (3) how NMFS will assess the practicability (*e.g.*, cost, safety, feasibility, benefits) of the mitigation and monitoring measures included in LOAs.

Ultimately, the process for identifying the mitigation and monitoring measures that may be necessary in LOAs should (1) allow G&G seismic operators to execute individual G&G surveys in a reasonable, timely, and cost-effective manner; (2) allow NMFS to tailor mitigation and monitoring measures to the specific location and circumstances associated with individual LOAs; and (3) be supported by information sufficient to complete the required regulatory reviews and associated findings under the Marine Mammal Protection Act, the National Environmental Policy Act, and the Endangered Species Act.

A plan to monitor the potential impacts of G&G activities on marine mammals is being developed with BOEM's petition to NMFS requesting the issuance of ITRs for G&G activities in the Gulf. Monitoring activities would be implemented for the life of the rule and will monitor how and to what extent G&G activities may affect marine mammals in the Gulf of Mexico. The monitoring and reporting methods identified in the monitoring plan measures implemented through the rule and the letters of authorization (LOAs) issued under the rule will allow for an "increased knowledge of the species, the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities and suggested means of minimizing burdens by coordinating such reporting requirements with other schemes already applicable to persons conducting such activity" 50 CFR 216.104(a)(13).

Monitoring activities will include the standard monitoring and reporting measures currently required of regulated industry in the GOM (see **Chapter 2** and **Appendix B**). Although the full suite of these standard monitoring and reporting measures will be set forth in the rule, each LOA issued under the rule may be tailored to address the specific facts and circumstances of the specific action. The monitoring and reporting requirements included in each LOA will generally require the documentation of the following information: (1) observations of the number of animals encountered by the exploration activity covered by the LOA, including species identification, location observed, date and time of the observation, and, if possible, the age, size, sex, and group size of the observed marine mammal(s); (2) behavioral reactions, if any, of the observed marine mammal(s) to the exploration activity covered by the LOA; and (3) other data that directly inform the question of whether, and if so, to what degree, marine mammals addressed in the rule are affected by the incidental take authorized by LOAs issued under the rule. All of the information collected under the terms of LOAs will be reported to the appropriate agencies on a specific schedule to be determined by BOEM and NMFS. LOA applicants will be expected to include details of the specific monitoring and reporting requirements in Marine Mammal Monitoring Plans, and NMFS will coordinate with the applicant to ensure its monitoring and reporting efforts meet applicable standards. See, e.g., 50 C.F.R. § 216.104(a)(13). Additional monitoring activities may include visual or acoustic observation of animals, new or ongoing research and data analysis, in-situ measurements of sound sources or other potential impact producing factors, or any other number of activities aimed at understanding the coincidence of marine mammals and G&G activities in space and time as well as the impacts that may occur from this overlap.

The monitoring plan program implemented through the rule may be adaptively managed through a process of design, implementation, periodic evaluation, and revision as needed. Any modifications to the monitoring plan through this adaptive process will be made available to the public. Through this adaptive process, the requirements included in LOAs may be modified based on the acquisition of additional information. In addition to the public comment process associated with this Draft PEIS, opportunity for public input on the monitoring plan would occur through any process that NMFS undertakes in response to BOEM's petition for rulemaking under the MMPA. For example, in some instances, there may be a need to include mitigation and monitoring measures in an LOA that are in lieu of, or in addition to, the measures specifically identified in the rule. Sufficient flexibility will be built into the regulatory process to identify any such additional measures. This flexibility is necessary to allow for the inclusion of additional measures that cannot reasonably be identified and assessed when the rule is issued but that can reasonably be identified and assessed at the time an LOA application is submitted, based on the activity-specific information provided in the LOA application. The process for identifying any such additional measures will be specifically set forth in the rule, and will be subject to public review and comment through both the MMPA rulemaking process and the NEPA process.

The development of the monitoring plan is ongoing. BOEM and NMFS are working collaboratively with the anticipated regulated parties to identify specific monitoring questions and activities that may be implemented during the period for which a rule would be issued. BOEM understands the importance of early and substantive public input in our environmental review processes. In early 2015, BOEM put out a request for information to seek input on the development of the monitoring plan (79 FR 66402) and held a series of webinars to solicit recommendations for monitoring goals and activities for marine mammals in the Gulf of Mexico. This process identified ongoing and planned activities in the GOM that may serve to inform, among other things, monitoring needs the monitoring and reporting requirements implemented through rule. ~~BOEM continues to coordinate with both industry and external stakeholders to understand how a marine mammal monitoring plan in the GOM for G&G activities may fit into other efforts in order to prevent duplication and address monitoring needs in the context of the larger Gulf ecosystem.~~

The specific details of the monitoring plan are not essential to make a reasoned choice among the alternatives in this Draft PEIS. Monitoring will be required regardless of the alternative chosen. Any impacts resulting from monitoring activities are expected to result in negligible or beneficial impacts to marine mammal species subject to the monitoring activities and are not expected to modify the impact conclusions in this document. Monitoring could be used adaptively to inform the suite of mitigation measures employed, resulting in similar or reduced levels of impacts to the species evaluated in this Draft PEIS. The specifics of the monitoring plan will be available prior to the issuance of any ITRs and the publication of the Final PEIS.

DRAFT, PRE-DECISIONAL. DO NOT DISTRIBUTE.

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May17, 2017

Honorable Ryan Zinke
Secretary of the U.S. Department of the Interior
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240

SUBJECT: Secretarial Order 3350

The Honorable Secretary Ryan Zinke,

API is pleased to see the Administration and the Department of the Interior (DOI) continuing to take strides to put in place a lasting, domestically-focused energy policy that will help the U.S. “maintain the Nation’s position as a global energy leader.” For too long the U.S. has been hampered by the lack of a strong domestic oil and natural gas energy policy. The oil and natural gas industry is committed to developing and producing domestic energy resources for the benefit of all Americans and doing so in a safe and environmentally sound manner. API represents over 625 oil and natural gas companies that supply most of America’s energy, support more than 9.8 million jobs and 8 percent of the U.S. economy, and, since 2000, have invested nearly \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives.

Secretarial Order 3350, America-First Offshore Energy Strategy, which implements Executive Order 13795, is an important step forward that will help the offshore oil and natural gas industry regain the cost-effective regulatory framework that promotes the certainty and predictability necessary to make the massive capital investments required to bring offshore energy projects to the U.S. economy. This will serve to further the Department’s stated goal “to ensure that responsible OCS exploration and development is promoted and not unnecessarily delayed or inhibited.” This letter is intended to inform the regulatory and policy reviews directed by the order and to offer any needed assistance to you as DOI continues to implement Secretarial Order 3350. In this letter we will address broad themes associated with each subject area addressed in the Secretarial Order and provide specific industry concerns in each area.

API believes there are opportunities to improve many of the DOI rules and policy initiatives while still promoting safety and environmental performance in offshore oil and gas exploration and development. We look forward to further opportunities to work with the Interior Department leadership and staff on these and other rules.

The Secretarial Order highlights many of the rules and policies that API and our industry partners have addressed in extensive comments. Where appropriate we have attached the relevant comments that will help provide specific details of needed changes as DOI performs its reviews of the various regulations, proposed rules, and policy initiatives.

Specific regulatory effort identified in Secretarial Order 3350:

1. Development of a new Five-year OCS Leasing Program. For many years, API has advocated for opening additional OCS areas to oil and natural gas exploration. We believe that it is important that DOI's evaluation of OCS areas is all-inclusive (26 Planning Areas) and that this evaluation does not prematurely eliminate areas that have resource development potential. The multi-step program development process is designed to collect information from all stakeholders, to provide the opportunity for careful analysis and consideration of available information, and to allow the Secretary of the Interior to decide on what areas are best suited for future offshore exploration and development activities. Since the existing process does not allow an area that is removed from consideration at an early stage to be added back in at a later stage, it is important not to prematurely eliminate areas from consideration. One important consideration for DOI to keep in mind is that even though a lease sale is scheduled to be held as part of a Five-year Program, a decision on whether or not to have the sale is not made until the time the sale is scheduled. This allows DOI flexibility to include lease sales in areas that may be under a temporary moratorium (like the Eastern Gulf of Mexico) or where new data is being collected (like the Atlantic) and then make the ultimate decision to hold the sale or not at the time the sale is scheduled. The decisions made now will have long-lasting impacts on U.S. energy policy. API, our members and our industry partners will be involved at all stages of the Five-year Program development. As a trade association, we are not in a position to provide information on specific areas of interest to our members. Rather we can offer that the prospect of lease sales in any given area will spur industry exploration activity which will provide valuable information to the government on the oil and natural gas potential of an area.
2. Cooperate with National Marine Fisheries Service (NMFS) to expedite consideration of Incidental Take Authorization (ITA) requests, including Incidental Harassment Authorizations (IHA) and Letters of Authorization; and, develop and implement a streamlined permitting approach for seismic surveys. This action is long overdue. For over a decade, API and our industry partners have attempted to have DOI and NMFS work together to promulgate incidental take regulations for geological and geophysical (G&G) surveys in the Gulf of Mexico (GOM). Much to our frustration this process has been exceedingly slow in spite of countless industry efforts that have included staff-level and management-level engagements, letters, responses to comment requests, etc. With a looming September 25, 2017 deadline on the expiration of a stay in a lawsuit filed over industry G&G activities in the GOM, this has now reached a near-crisis level. In short, by September 25, 2017 DOI must finish the Programmatic Environmental Impact Statement (PEIS), NMFS must be compelled to propose and finalize incidental take regulations, and NMFS must complete the required consultation with DOI under the Endangered Species Act.

Completing the actions outlined above is complicated by previous agency work. In general, a fundamental flaw with the Draft PEIS was its establishment of an unrealistic scenario in which G&G activities are projected to result in supposed effects to marine mammals that DOI admits are unrealistic overestimates of impact. The supposed adverse effects of this worst case hypothetical scenario were then addressed in the Draft PEIS with burdensome and unsupported mitigation measures. This approach is contrary to both the best available scientific information and applicable law. For over 40 years, the federal government and academic scientists have studied the potential impacts of G&G activities on marine mammals, and have concluded that any such potential impacts are insignificant. The DPEIS's suggestion that such impacts are "moderate" (as opposed to insignificant) is not supported by the best available science and is made possible only by application of overly conservative estimates that DOI admits do not accurately reflect the actual anticipated impacts.

Many of the mitigation measures recommended in certain alternatives presented in the DPEIS are economically and operationally infeasible, will impose serious burdens on industry, and are highly unlikely to result in benefits to protected species. Industry can and will support mitigation measures that are grounded in the best available science and consistent with existing practices that are proven to be effective and operationally feasible. However, we cannot support mitigation measures with no basis in fact or science, which are intended to address presumed adverse effects that will not occur, and which will result in less offshore exploration. As to the alternatives presented in the DPEIS, API finds Alternative A to be the most reasonable because it presents the option that is most consistent with the best available science, operational feasibility, and applicable law.

Unless the faulty assumptions made in the Draft PEIS are corrected, NMFS will be forced to rely on that information to draft the proposed incidental take regulations, which in turn, will likely seek to impose unrealistic and unnecessary mitigation measures on industry. This is contrary to the stated goals of the EO and SO. Detailed industry comments on the DPEIS are attached for your reference.

3. Expedite consideration of Atlantic seismic survey permits. The decision to reverse the previous administration's unjust denial of these permits is welcome news. Subsequent action by the Interior Bureau of Land Appeals to remand the appeals of the denied permits back to the Bureau of Ocean Energy Management for further consideration paves the way for approval of those permits. However, NMFS must be compelled to complete its work on ITA permit applications for true progress to be made in this area.
4. Complete the review of Financial Assurance guidance found in NTL 2016-NO1. DOI has been working closely with the Offshore Operators Committee (OOC) and the OCS Advisory Board of the Petroleum Landman's Association to remedy the shortcomings of DOI's approach on the issues of risk management and financial assurance. API supports this approach and will be evaluating the suggested changes to the NTL that the industry work group is contemplating.
5. Cease activity to promulgate Offshore Air Quality Regulations. API and OOC have been actively engaged with DOI following the issuance of the proposed air quality rule. Based

on industry's extensive comments on the proposed rule (attached) and our engagement over the last year, we believe that DOI had begun to understand the importance of collaborating with industry to gather needed information on our operations in order to promulgate feasible and effective regulations. Industry remains concerned with DOI's ongoing GOM air quality study, particularly with the assumptions made in air quality modelling. Based on our current understanding, we believe the modelling should better reflect actual conditions rather than attempting to depict a worst case scenario. Our efforts to evaluate the work have been hampered by a lack of information. While some information has been made available, still more is required to make a full evaluation. Our recent comments on the Draft GOM Multi-sale Supplement Environmental Impact Statement (attached) detail our current concerns in this area.

Going forward, industry urges DOI to follow an approach similar to that employed in working through the issues associated with the financial assurance NTL (as detailed above). Specifically, we believe the following course of action could be appropriate:

- Create an industry workgroup to provide input on changes to the assumptions and inputs to the modeling study.
 - DOI should discontinue the use of its preliminary air quality modeling study results, including their use in NEPA documents.
 - DOI should finish its air quality study and use it as input to a revised rulemaking.
 - If appropriate based on study results, DOI should restart the rulemaking process with an advance notice of proposed rulemaking (ANPR).
6. Review Offshore Well Control Regulations. The Final Well Control Rule is greatly improved from the proposed rule, but numerous concerns still remain. Seven industry trade associations have been working to outline our concerns with the regulation and its implementation and will be sending a separate letter to DOI that will provide specific details. As a preview, we wish to highlight four major concerns, in no particular order: Industry remains concerned with the drilling margin requirements in the final well control rule and suggest deleting the new regulatory text and reverting to the previous requirements. That risk-based approach to managing drilling margin in combination with existing regulatory oversight has been demonstrated to safely and economically drill wells; the requirements that exceed the provisions of API Standard 53 (API 53), Blowout Prevention Equipment Systems for Drilling Wells are unnecessary, will not improve safety and will increase risks to operations, which is why, we recommend using the requirements in API 53 as the primary best practice; rulemaking on Real-Time Monitoring is premature, we suggest deleting those requirements; and, we do not see the need for BSEE to require certification by BSEE-approved verification organizations (BAVOs). Certification can be done by third party organizations; they do not need to be approved by BSEE.
7. Review Arctic Drilling and Operations Regulations. API and our industry partners continue to believe that access to Alaska offshore oil and natural gas resources under balanced and science-based regulations is essential to the nation's long term economic and energy security. We encourage DOI to embrace the finding in the 2015 National Petroleum Council "Arctic Potential" report. Specifically, that nearly a century of oil and natural gas exploration and production activity in the region demonstrates that development of the Alaska OCS can take place in a safe and environmentally responsible

manner while protecting habitat, wildlife, communities, and subsistence lifestyles. The 2016 Arctic rules package imposes prescriptive requirements based on the premise that a catastrophic spill is inevitable and that one particular combination of technologies and methods should be applied to operations in all locations. Industry's specific concerns are detailed in comments submitted to the agencies during the rulemaking process (attached), and we are prepared to discuss these concerns with the DOI as part of the review directed under the SO.

We appreciate the actions of this Administration to eliminate unnecessary burden and to restore certainty and predictability into the offshore permitting and regulatory regimes. We look forward to continued engagement with the Department and you on these important issues to assure that the energy that is fundamental to our society can be developed and delivered safely.

Thank you again for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to be "S. J. ...", written over a light gray background.

Group Director
Upstream and Industry Operations
American Petroleum Institute

CC:

Counselor to the Secretary for Energy Policy Vincent DiVito
Acting Assistant Secretary Katharine MacGregor
BSEE Director
BOEM Director

To: Devito, Vincent[vincent_devito@ios.doi.gov]
From: Holly Hopkins
Sent: 2017-05-17T15:08:16-04:00
Importance: Normal
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control
Received: 2017-05-17T15:08:49-04:00

Vince,

API would like to come introduce ourselves to you and discuss issues that our members are interested in. We are working on possible dates/times for next week and will get back to you ASAP.

Thanks,
Holly

Sent from my Verizon, Samsung Galaxy smartphone

----- Original message -----

From: "Devito, Vincent" <vincent_devito@ios.doi.gov>
Date: 5/17/17 2:55 PM (GMT-05:00)
To: Holly Hopkins <hopkinsh@api.org>
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Thank you.

On Wed, May 17, 2017 at 2:42 PM, Holly Hopkins <hopkinsh@api.org> wrote:

In addition to the letter sent this morning by the Joint Trades on the WCR. API sent the attached letter to Secretary Zinke today to cover all the items in the Secretarial Order. I thought you might be interested. Please let us know if you have any questions or would like to discuss further. Thanks.

From: Holly Hopkins
Sent: Wednesday, May 17, 2017 10:21 AM
To: Macgregor, Katharine
Cc: 'Devito, Vincent'; Tom Lillie (Thomas.Lillie@bsee.gov); Doug Morris (douglas.morris@bsee.gov); Lars Herbst (lars.herbst@bsee.gov); Malstrom, Kirk; Jim Cason; Daniel Jorjani
Subject: RE: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

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apologies and corrected above. Thank you again

From: Holly Hopkins
Sent: Wednesday, May 17, 2017 7:51 AM
To: Macgregor, Katharine
Cc: Vincent DeVito (vincent_devito@ios.dio.gov); Tom Lillie (Thomas.Lillie@bsee.gov); Doug Morris (douglas.morris@bsee.gov); Lars Herbst (lars.herbst@bsee.gov); Malstrom, Kirk; Jim Cason; Daniel Jorjani
Subject: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Kate,

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Thank you for your consideration of these comments, please do not hesitate to contact us if you have any questions or would like to meet for further discussion.

Thanks,

Holly A. Hopkins

Sr. Policy Advisor, Upstream

American Petroleum Institute

1220 L Street, NW

Washington, DC 20005

202-682-8439 Tel

hopkinsh@api.org



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To: MacGregor, Katharine[katharine_macgregor@ios.doi.gov]
Cc: Devito, Vincent[vincent_devito@ios.doi.gov]; Jim Cason[James_Cason@ios.doi.gov]; Daniel Jorjani[daniel_jorjani@ios.doi.gov]
From: Holly Hopkins
Sent: 2017-05-17T23:14:23-04:00
Importance: Normal
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control
Received: 2017-05-17T23:14:40-04:00

Kate,

API has sent letters to EPA and Commerce on other EOs, not this one. We are discussing sending a new letter to Commerce on this Offshore EO.

Thanks,

Holly

Sent from my Verizon, Samsung Galaxy smartphone

----- Original message -----

From: "MacGregor, Katharine" <katharine_macgregor@ios.doi.gov>
Date: 5/17/17 3:00 PM (GMT-05:00)
To: Holly Hopkins <hopkinsh@api.org>
Cc: "Devito, Vincent" <vincent_devito@ios.doi.gov>, "Lars Herbst (lars.herbst@bsee.gov)" <lars.herbst@bsee.gov>, Jim Cason <James_Cason@ios.doi.gov>, Daniel Jorjani <daniel_jorjani@ios.doi.gov>
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Thanks Holly - Just curious if a similar transmission was made to other Departments mentioned in the EO? Thanks.

-Kate

On Wed, May 17, 2017 at 2:42 PM, Holly Hopkins <hopkinsh@api.org> wrote:

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Subject: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

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API, IADC, IPAA, NOIA, OOC, PESA, and the US Oil and Gas Association are pleased to provide detailed information on the final Blowout Preventer Systems and Well Control rule to inform the regulatory and policy review directed by Secretarial Order 3350 and to offer any needed assistance to you as DOI continues to implement the Order.

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Thank you for your consideration of these comments, please do not hesitate to contact us if you have any questions or would like to meet for further discussion.

Thanks,

Holly A. Hopkins

Sr. Policy Advisor, Upstream

American Petroleum Institute

1220 L Street, NW

Washington, DC 20005

202-682-8439 Tel

hopkinsh@api.org



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--

Kate MacGregor
1849 C ST NW
Room 6625

Washington DC 20240

202-208-3671 (Direct)

To: Devito, Vincent[vincent_devito@ios.doi.gov]; Ojeda-dodds, Gisella[gisella_ojeda-dodds@ios.doi.gov]
From: Holly Hopkins
Sent: 2017-05-17T23:25:04-04:00
Importance: Normal
Subject: RE: Secretarial Order 3350 & Blowout Preventer Systems and Well Control
Received: 2017-05-17T23:25:19-04:00

Thanks.

Gisella, API would like to meet with Vince on Thursday, May 25 at 2:00 pm (or later) if possible.

Thanks again.

From: Devito, Vincent [mailto:vincent_devito@ios.doi.gov]
Sent: Wednesday, May 17, 2017 3:12 PM
To: Holly Hopkins; Ojeda-dodds, Gisella
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Okay. Adding Gisella to coordinate. Thanks.

On Wed, May 17, 2017 at 3:08 PM, Holly Hopkins <hopkinsh@api.org> wrote:
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Thank you for your consideration of these comments, please do not hesitate to contact us if you have any questions or would like to meet for further discussion.

Thanks,

Holly A. Hopkins
Sr. Policy Advisor, Upstream
American Petroleum Institute
1220 L Street, NW
Washington, DC 20005
202-682-8439 Tel
hopkinsh@api.org



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To: Ojeda-dodds, Gisella[gisella_ojeda-dodds@ios.doi.gov]
Cc: Devito, Vincent[vincent_devito@ios.doi.gov]
From: Holly Hopkins
Sent: 2017-05-18T11:34:13-04:00
Importance: Normal
Subject: RE: Secretarial Order 3350 & Blowout Preventer Systems and Well Control
Received: 2017-05-18T11:34:43-04:00

Excellent, thank you.

Our list of attendees:

Erik Milito, Group Director, Upstream militoe@api.org
Andy Radford, Sr. Policy Advisor, Upstream Radforda@api.org
Richard Ranger, Sr. Policy Advisor, Upstream rangerr@api.org
Carrie Domnitch, Director, Federal Relations domnitchc@api.org
Matt Haynie, Sr. Counsel HaynieM@api.org
Holly A. Hopkins, Sr. Policy Advisor, Upstream

See you next week. Thank you again.

From: Ojeda-dodds, Gisella [mailto:gisella_ojeda-dodds@ios.doi.gov]
Sent: Thursday, May 18, 2017 11:15 AM
To: Holly Hopkins
Cc: Devito, Vincent
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

Good Morning,

Thursday, May 25 at 2PM works for Mr. DeVito. I've gone ahead and sent you an invite. If you could please send me the names and titles of those attending with you so that I can let our security office know. Our office is located at:

U.S. Department of the Interior
1849 C Street, NW, 6th Floor, Room 6136
Washington, D.C. 20240

You can enter the building through either the "C" or "E" street entrance. Our office is closest the "C" street entrance. Please bring a valid photo I.D. with you. When you arrive you must check-in with security who will then confirm you as a guest (they will call me at (202) 208-4123 to confirm). They will issue you a blue visitor's badge which you will need to show our guard on the 6th floor. I can escort you from the lobby if you wish. Please be prepared to go through a metal detector.

If you need anything further please let me know.

Sincerely,

Gisella Ojeda-Dodds

On Wed, May 17, 2017 at 11:25 PM, Holly Hopkins <hopkinsh@api.org> wrote:
Thanks.

Gisella, API would like to meet with Vince on Thursday, May 25 at 2:00 pm (or later) if possible.

Thanks again.

From: Devito, Vincent [mailto:vincent_devito@ios.doi.gov]
Sent: Wednesday, May 17, 2017 3:12 PM
To: Holly Hopkins; Ojeda-dodds, Gisella
Subject: Re: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

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Holly

Sent from my Verizon, Samsung Galaxy smartphone

----- Original message -----

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Cc: 'Devito, Vincent'; Tom Lillie (Thomas.Lillie@bsee.gov); Doug Morris (douglas.morris@bsee.gov); Lars Herbst (lars.herbst@bsee.gov); Malstrom, Kirk; Jim Cason; Daniel Jorjani

Subject: RE: Secretarial Order 3350 & Blowout Preventer Systems and Well Control

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Holly A. Hopkins
Sr. Policy Advisor, Upstream
American Petroleum Institute
1220 L Street, NW
Washington, DC 20005
202-682-8439 Tel
hopkinsh@api.org



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--

Gisella Ojeda-Dodds
Executive Assistant to Douglas Domenech, Senior Advisor
Megan Bloomgren, Acting Deputy Chief of Staff
Vincent DeVito, Counselor for Energy Policy
&
Downey Magallanes, Special Assistant
Immediate Office of the Secretary
U.S. Department of the Interior
1849 "C" Street, NW, MS: 6136-MIB
Washington, D.C. 20240
Telephone: (202) 208-4123/4105
Facsimile: (202) 208-4561
E-mail: Gisella_Ojeda-Dodds@ios.doi.gov

To: vincent_devito@ios.doi.gov[vincent_devito@ios.doi.gov]
From: devitovincent
Sent: 2017-05-22T06:00:33-04:00
Importance: Normal
Subject: Zinke Orders Revamp of 2017-2022 OCS Oil, NatGas Leasing, Appoints Energy Counselor | 2017-05-02 | Natural Gas Intelligence
Received: 2017-05-22T06:00:40-04:00

<http://www.naturalgasintel.com/articles/110316-zinke-orders-revamp-of-2017-2022-ocs-oil-natgas-leasing-appoints-energy-counselor>

To: Vincent_devito@ios.doi.gov[Vincent_devito@ios.doi.gov]
From: Andrew Black
Sent: 2017-05-23T10:00:15-04:00
Importance: Normal
Subject: follow-up on Secretary conversation with AOPL's John Stoody
Received: 2017-05-23T10:00:49-04:00
[ICF Domestic Pipeline Steel Report.pdf](#)
[Exec Summary Cover Letter ICF Pipeline Steel Study.pdf](#)
[AGA API AOPL GPA INGAA Domestic Steel FRN Joint Comments.pdf](#)

Vincent, I am following up on a conversation John Stoody of AOPL had with Secretary Zinke a few weeks ago at a Senator Daines event. John raised the President's "Buy American" pipeline steel memo to Commerce and the pending Commerce development of a plan. Also, when we were discussing this issue with Mike Catanzaro, we discussed that Secretary Zinke would be an important person in that conversation.

A coalition of five pipeline trade associations asks to meet you or any DOI personnel who would participate in any Administration discussions on the issue. Our group includes AOPL, API, INGAA, AGA, and GPA Midstream.

I am forwarding our follow-up email to Catanzaro and documents related to our industry comments and a related ICF study.

Thank you, and sorry to add one to the list.

Andy Black
President and CEO

Association of Oil Pipe Lines (AOPL)
1808 Eye Street, NW, Suite 300
Washington, DC 20006
202.292.4500
ablack@aopl.org | www.aopl.org

From: John Stoody <jstoody@aopl.org>
Date: Wednesday, May 17, 2017 at 3:43 PM
To: Mike Catanzaro <[REDACTED]@ios.doi.gov>
Cc: Andy Black <ablack@aopl.org>
Subject: Analysis of Domestic Pipeline Steel Requirement

Mike,

As discussed in our meeting, attached and summarized below is additional analysis on the anticipated feasibility and impacts of a domestic content requirement for pipeline steel, pipe and equipment. The major pipeline trade associations commissioned this analysis from ICF and it was finalized yesterday.

As summarized below and detailed in the ICF report, administration action in this area could add more than \$75 million to the cost of a modest pipeline project, and by extension over \$300 million to a major pipeline project like Keystone XL. Such a cost increase could delay or cancel pipeline projects leading to a loss of U.S. jobs and manufacturing activity. We look forward to discussing this further.

Summary of ICF Findings on Expected Feasibility and Impacts of *Construction of Pipelines Using Domestic Steel and Iron Action*

1. For certain materials and equipment used to construct, operate, and maintain energy pipelines, current domestic production capacity is limited or unavailable. Therefore, an immediate implementation of domestic content requirements could stall pipeline projects.
2. Prohibiting the import of line pipe, the plates and coils from which line pipe is made, and the slabs from which plates and coils are rolled will substantially reduce supply available to the market and increase market concentration in the domestic steel industry. Large increases in market concentration increase the likelihood of non-competitive pricing behavior and higher prices.
3. Removal of the international supply of steel, pipe, and equipment from the U.S. market, as well as the increase in market power of domestic manufacturers, may substantially increase the cost of pipeline projects.
4. ICF expects long-term line pipe, fitting, and valve prices to rise 25% if imports are prohibited. For a 280-mile 36-inch diameter oil or gas pipeline, ICF estimates that this price increase would result in a \$76 million cost increase. Furthermore, the total cost of this pipeline would rise by 6.3 to 13.6 percent in the “initial transition period,” when any new requirements are being implemented and domestic manufacturers are expanding capabilities. The total costs of major pipeline projects are often in the billions of dollars, and a cost increase of this magnitude could result in project delays or cancellations.

Thanks, John

John Stody

Vice President, Government & Public Relations

Association of Oil Pipe Lines (AOPL)

1808 Eye Street, NW Suite 300

Washington, DC 20006

Direct 202.292.4509 | Mobile 202.957.3554

jstody@aopl.org | www.aopl.org