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**Outer Continental Shelf (OCS) Air Permitting Under the Clean Air Act (CAA) Seminar Notes
Virtual Meeting/Microsoft Teams Webinar
February 26, 2024
1:00 p.m. – 4:30 p.m. ET**

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Meeting Information

Seminar Purpose:

- Provide project developers and other interested external partners transparency in the OCS air permitting process by explaining what the process is and how it works with the goal of issuing OCS air permits in an efficient manner and in compliance with the applicable statute and regulations.

Meeting Objectives:

- Provide an overview of the OCS air permitting program, including the applicable regulatory requirements, and permitting timeline, with the goal of improving OCS air permit applications.
- Communicate expectations for complete OCS air permit applications, including clarifying the distinction between the application completeness review and approvability review.
- Provide an overview of the applicable air quality modeling requirements for OCS air permit applications.
- Engage in constructive dialogue on OCS air permitting best practices to facilitate issuing air permits for offshore wind facilities that adhere to Federal and State, where applicable, air quality requirements.

Welcome

Opening Remarks

Janet McCabe, Environmental Protection Agency (EPA) Deputy Administrator, delivered opening remarks emphasizing that:

- The Biden Harris administration goal of deploying 30 gigawatts (GW) of offshore wind electricity generation by 2030 to power American homes with clean power while creating good paying jobs in the US across manufacturing, ship building, port operations, construction, and other sectors.
- The administration's permitting action plan, which brings together federal agencies, White House offices, and the Federal Permitting Improvement Steering Council (FPISC) to promote efficient reviews guided by the best available science and Indigenous Knowledge.
- The CAA Section 328 permits help ensure that air pollution emissions from these projects do not create new violations of the National Ambient Air Quality Standards (NAAQS) for the major air pollutants, such as the new fine particle standard, nitrogen dioxide and sulfur dioxide, and that they do not expose anyone to toxic pollutants at or above EPA-deemed safe levels.
- The complexity and the unique features of offshore wind projects, and that of the air permit is just one of many approvals on the critical path to a successful project.
- The goal of this meeting is to discuss the overall CAA OCS air permitting program and ensure that project developers understand the process. We see our job as issuing permits, not denying, or delaying permits.
 - EPA has issued or public noticed eight OCS permits for various project developers, and although each project is different, there are common requirements for all CAA permits.
 - Numerous case specific issues have presented nuanced challenges in CAA permitting policy. However, we have been able to resolve many of these issues.
 - Today we'll go over the requirements and look to clear up any confusions that may exist.

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- Moving forward, we will collectively be able to issue air permits more smoothly and efficiently. We appreciate your engagement as we work through these issues. We want to focus on answering questions and clearing up confusions about the process overall.
- Contact the EPA regional or delegated permitting agency staff for project specific questions. Please be assured that we want to answer every question that comes up, whether it's today or in the days to come.

Karen Baker, Chief of Bureau of Ocean and Energy Management (BOEM)'s Office of Renewable Energy Program delivered opening remarks on behalf of BOEM director Elizabeth Klein emphasizing that:

- BOEM is responsible for the environmentally and economically responsible development of the OCS, which includes mineral resources and energy resources.
- We are focused today on the goals of deploying 30 GW of offshore wind by 2030. We are committed to transparency and clarity in our permitting process.
- For over a year, BOEM has convened a group of interagency representatives committed to the goal of putting into place processes that will streamline, bring clarity, and address the complexities and challenges for permit applicants as they enter the offshore wind industry.
- We can help answer questions.

Eric Beightel, Executive Director for the Federal Permitting Improvement Steering Council (FPISC) also delivered opening remarks, emphasizing that:

- This seminar is an opportunity to help facilitate conversation and coordination across the federal government to advance these critical infrastructure projects. The work that everybody is doing is key to delivering the president's commitment to building a clean energy future.
- Much of FPISC's work occurs at the project level. We work with project sponsors and with agencies to ensure that the environmental review and permitting processes of major infrastructure projects are efficient and predictable. We coordinate among the numerous agencies involved in the project, helping to troubleshoot challenges, and providing a forum for resolving complex issues when they arise, all while providing transparency and accountability via our publicly available permitting dashboard.
- Offshore wind is a big part the FPISC portfolio. We currently have 13 active offshore wind projects covered under our FAST-41 statute (Title 41 of the Fixing America's Surface Transportation Act), as well as two planned projects and two other projects for which reviews have been completed. These FAST-41 covered offshore wind projects are key to implementing the Biden Harris administration's goal of deploying 30 GW of offshore wind by 2030, while also protecting biodiversity and promoting ocean co-use.
- For those who are engaged in projects that are not covered by FAST-41, I certainly encourage you to reach out to us to discuss whether your project would benefit from FPISC support.
- While projects are the primary focus of our agencies, FPISC also serves as a Federal Center for Permitting Excellence to promote collaboration and coordination and elevate best practices across environmental permitting reviews for all, not just FAST-41, infrastructure projects.
- The work of advancing key infrastructure projects while protecting clean air and clean water is no small task and too often processes have suffered from inefficiencies and a lack of coordination. We're here today to make sure that all of us are positioned for success, which includes submitting high quality applications, creating environmental review documents that are thoughtful and defensible and ultimately successful in building renewable energy projects.
- I hope the information shared today will help the projects your teams are working on now in the future. I look forward to working with you all.

Scott Mathias, EPA, Director of the Air Quality Policy Division (AQPD) in EPA's Office of Air Quality Planning and Standards (OAQPS), finalized the opening remarks emphasizing:

- My division maintains the national regulatory program for implementing the CAA's criteria pollutant standards, including fine particles, ozone, nitrogen oxide, sulfur dioxide and lead. We provide national oversight of the CAA state implementation plan provisions, as well as the national regulatory framework for stationary source air emissions permitting, which includes both preconstruction permitting and Title V operating permits and the OCS preconstruction air permitting process. These permit programs also include authority in certain circumstances to regulate greenhouse gases.
- Today's seminar will cover the unique requirements and permitting process for issuing CAA permits for air emission sources on the OCS.
- Air permitting focuses on a relatively granular analysis of emissions of key air pollutants, with specificity both in time and space that are specific to the CAA's requirements, and these may differ from the analysis needs under other statutes or processes.
- The process steps and associated timelines are dictated in large part by both specific CAA timelines and our job as a regulatory authority of issuing legally sound permits that comply with all the applicable regulations. We try to align key parts of that process with the work of other agencies where it is possible.
- The CAA OCS permits are unique because they:
 - They incorporate federal, state, and local CAA requirements to sources on the OCS. More extensive requirements apply to sources closer to shore than those located further out on the OCS.
 - Implement CAA requirements normally designed for sources onshore but translates them to sources on the OCS based on statutory authority under CAA Section 328. This raises a series of unique questions and implementation challenges that sources seeking permits onshore do not normally face.
- We hope that today's seminar will serve as a good starting point for understanding the basics of OCS air permitting, its statutory and regulatory authorities, and some of the best practices to date for issuing OCS permits. We will also clarify some of the modeling requirements that apply to sources on the OCS.
- EPA staff and those from our delegated permitting authorities are always available to assist in your individual permitting actions and answer any questions that you might have about this permitting program.

OCS Air Permitting Overview

EPA staff provided an overview of various OCS air permitting requirements. These include:

Regulatory Requirements

- Our CAA OCS permitting authority derives from CAA, Section 328, the section of the CAA that establishes the regulatory requirements to control air pollution from sources in the OCS. The corresponding regulations were established in 1992 and 1997 and promulgated at 40 Code of Federal Regulations (C.F.R.) part 55. The terms EPA administrator, permitting authority, and reviewing authority will be used interchangeably during this presentation.

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- CAA Section 328 and 40 C.F.R. part 55 are implemented by EPA through the issuance of OCS permits. The specific OCS permit requirements depend on whether the source will be in the inner or outer OCS, which are colloquial terms not found in CAA Section 328 or Part 55.
 - Each coastal state has a 3-9 nautical mile (nm) buffer known as the state seaward boundary (SSB) (9 nm apply to Texas & Florida), where the state has jurisdiction over those waters.
 - The inner OCS is the area at or within 25 nm from the SSB.
 - The outer OCS is the area beyond 25 nm from the SSB up to 200 nm offshore.
- 40 C.F.R. 55.13 are the federal requirements that apply to OCS sources in both the inner and outer OCS. These are the New Source Performance Standards (NSPS), the National Emission Standards for Hazardous Air Pollutants (NESHAPs), the New Source Review (NSR) preconstruction permitting program for attainment areas, which is called Prevention of Significant Deterioration (PSD), and the Title V operating permit program.
- Sources in the inner OCS can also be subject to more stringent requirements depending on the air quality of the Corresponding Onshore Area (COA), which is generally the nearest state to the OCS source, or a different state designated by the EPA Administrator. For example, the Nonattainment New Source Review (NNSR) preconstruction permitting will apply to sources in the inner OCS if that program also applies in the COA.

OCS Air Permitting Jurisdiction

- EPA has OCS air permitting authority along the Pacific coast, offshore Alaska (except in the Beaufort and Chukchi seas), along the Atlantic coast, and offshore Florida (including the Eastern Gulf of Mexico).
- EPA doesn't have OCS permitting authority in the Western or Central Gulf of Mexico. BOEM oversees those areas in the Gulf instead of EPA. We have also delegated implementation of the OCS air permitting program (i.e., authorized states or local agencies to implement the federal OCS air pollution control requirements on behalf of the EPA) to three state agencies and four California air pollution control agencies. Those are the states of Delaware, Maryland, and Virginia and four local agencies in California: San Luis Obispo, Santa Barbara, South Coast and Ventura County. We have representatives from all those states and agencies with us here today.
- Wind energy in the OCS is part of Executive Order (EO) 14008 titled "Tackling the Climate Crisis at Home and Abroad." This EO was issued in January 2021 with the goal of doubling offshore wind by 2030. Furthermore, in March 2021, the Department of Interior, the Department of Energy, and the Department of Commerce set a goal to deploy 30 GW of offshore wind energy by 2030.
- Because of this goal, we have issued multiple permits to OCS wind energy facilities and we're in the process of issuing a few more. To date, we have issued air permits for the Vineyard Wind 1, South Fork Wind, Revolution Wind, and Empire Wind projects; for an approximate 3.8 GW of permitted offshore wind electricity. We also have public noticed various draft permits which include New England Wind I and II, Sunrise and the Coastal Virginia Offshore Wind Project.
- We also have OCS wind proposals off the coast of California and Oregon in addition to the New York Bight area, the coast of Virginia, and North Carolina.

OCS Air Permitting Process & Timeline

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- We usually begin our permitting process right about the time that BOEM deems the Construction and Operation Plan (COP) complete in their offshore wind energy authorization process timeline. For certain projects, the COP is issued before EPA finalizes the OCS air permit, while for other projects the OCS air permit has been issued before the COP is finalized.
- In the press, we commonly see headlines stating that a project has been authorized or has been approved by BOEM, and therefore the developer can start construction. However, we want to remind all seminar participants today that for purposes of the CAA, construction cannot start before the air permit, in this case the OCS air permit, is issued.
- The EPA's OCS air permitting process timeline, based on the milestones that are included in the FAST-41 dashboard that FPISC administers for large infrastructure projects, includes the following four milestones: the notice of intent (NOI), the permit application submittal date, the permit application determined complete date, and the issuance of the final OCS air permit date.
- NOI: An NOI is only required for projects that would be in the inner OCS. The NOI's main purpose is for developers to notify the EPA about the details of an upcoming project for which the air quality impacts of that project need to be evaluated. EPA strongly encourages project developers to schedule pre-NOI meetings with the applicable permitting authority (i.e., the applicable EPA, state, or local permitting authority) to ensure that the NOI and any subsequent application aligns with the underlying requirements.
- Permit Application Submittal: The next step in the permitting process is when the developer submits the permit application to the applicable permitting authority. This permit application cannot be submitted to the applicable permitting authority any earlier than 18 months from the date that the NOI was submitted to the same permitting authority. EPA strongly encourages project developers to schedule pre-application meetings with the applicable permitting authority around 9 to 12 months before submitting their permit application for review. The pre-application meetings gives the permitting authority the opportunity to learn more about the proposed project, answer questions, assist in developing the permit application submittal, and discuss the air quality modeling protocol.
- Determine the application complete: The third step is when the permitting authority determines the application complete. Completeness means that the application has all the information that the EPA or the applicable permitting authority needs to process that application. It doesn't mean that the permitting authority has conducted any technical reviews of the application or that the project is approved for construction.
 - The timeframe between the date an application is received and the date the application is determined complete varies. To date this process has taken between 4 to 11 months, depending on the complexity of the permit application. In general, the permitting authority has 30 days to determine whether a submitted permit application is complete. If the permit application is incomplete, the permitting authority will list the information necessary to make the application complete in a letter. Once EPA or the permitting authority receives the necessary information, the permitting authority can take another 30 days to determine whether the application is complete. If the permitting authority were to find the application incomplete again, the permitting authority will document that in another letter.

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- By statute (CAA § 165(c)), the permitting authority has 1-year from the date that the permit application is determined complete to grant or deny the final permit. This is particularly relevant for those permits that are subject to the PSD preconstruction permitting requirements. For Title V operating permits, a final permit decision must be made within 18 months after the date the application is determined complete. Where an OCS permit addresses multiple requirements (PSD, Title V, etc.) we usually seek to make that final decision as early as possible.
- Once the permitting authority has all necessary information and determines the permit application complete, the permitting authority will begin to evaluate the permit application. If additional information is necessary during that evaluation, the permitting authority will request that information from the permit applicant.
- After the permit application has been evaluated, the permitting authority will develop the draft permit and fact sheet (i.e., an explanation of the statutory and regulatory authority for issuing the permit and how the permit applicant must comply with those requirements) that will accompany the draft permit.
- Once the draft permit and fact sheet are finalized, they are subject to a 30-day public comment period (minimum). We hold a public hearing concurrently with the public comment period to provide additional opportunities for public comment.
- **Final permit:** Once the public comment period closes, we move on to develop the final permit and the accompanying response to comments document, which addresses all the comments received during the public comment period. During that time, EPA also waits on the BOEM National Environmental Policy Act (NEPA) Record of Decision (ROD), which EPA uses to fulfill the requirements of the Endangered Species Act (ESA), National Historic Preservation Act (NHPA) and Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA).
 - Under Section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), the EPA must ensure that any action authorized, funded, or carried out by the EPA is not likely to jeopardize the continued existence of any federally listed endangered species or threatened species or result in the destruction or adverse modification of such species' designated critical habitat.
 - Section 106 of the NHPA, 16 U.S.C. 470f, and the implementing regulations at 36 C.F.R. part 800 require federal agencies to consider the effect of their actions on historic properties and afford the opportunity for the Advisory Council on Historic Preservation and consulting parties to consult on the Federal undertaking.
 - In accordance with Section 305(b)(2) of the MSA, 16 U.S.C. § 1855(b)(2), federal agencies are required to consult with the National Marine Fisheries Service (NMFS) on any action that may result in adverse effects on essential fish habitat.
- Once the final permit is issued, the source is allowed to begin construction.

Common Policy Questions

1. What is the OCS source for purposes of CAA permitting?
 - Per CAA Section 328, an OCS source is any equipment, activity or facility which emits or has the potential to emit any air pollutant; is regulated or authorized under the Outer

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Continental Shelf Plans Act; and is located on the OCS or in or on waters above the OCS. The CAA adds that such activities can include but are not limited to platform and drill ship exploration, construction, development, production, processing, and transportation. Note that the statute specifically includes construction activities as “OCS source” activities, whereas CAA permitting programs that apply onshore generally do not regulate construction phase emissions.

- An OCS source can also include vessels and our regulations at 40 C.F.R. part 55 explain the two instances where vessels are part of the OCS source: (1) when they are permanently or temporarily attached to the seabed and erected thereon and used for the purposes of exploring, developing or producing resources therefrom and (2) when the vessel is physically attached to an OCS facility, in which case only the stationary source aspects of the vessels will be regulated.
2. Which equipment is part of OCS source based on EPA’s statutory and regulatory authority?
 - EPA’s position is that all stationary equipment, activities and facilities within the proposed wind farm are part of that single OCS source; they are integral components of the single industrial operation. Together they have the potential to emit any air pollutant, they are regulated or authorized under OCSLA, and they are located on the OCS or in or above the waters in the OCS. The OCS source comprises all offshore wind turbine generators and their foundation, each offshore substation and its foundation, the inter-array cables, and the vessels that meet the definition of an OCS source as specified in 40 C.F.R. 55.2. The OCS source’s “potential emissions” include emissions from any vessel servicing or associated with any component of the OCS source while at or en route to the OCS source, within 25 nm of the source.
 3. Do separate wind farms constitute one OCS source?
 - OCS sources subject to the PSD preconstruction permitting requirements and title V, can constitute one OCS source based on our regulations at 40 C.F.R. 52.21 and 40 C.F.R. part 70 and 71. Under these regulations, sources that are within the same industrial classification (i.e., same SIC code), located on contiguous or adjacent properties, and are under common control (i.e., one owner for both facilities or one source owner has a partnership stake on the adjacent source) are one stationary source. For example, the South Fork and Revolution Wind projects were considered one OCS source because they have the same SIC code, are adjacent and are under common control. The Sunrise Wind project was not aggregated with South Fork Wind and Revolution Wind because although they have the same SIC code and are under common control Sunrise Wind is not adjacent to them, it is separated from the Revolution Wind/Southfork Wind projects by the Cox Ledge.
 4. Are the construction and operation and maintenance (O&M) phases separate phases of the same OCS source or can these phases be considered separate OCS sources?
 - Construction and O&M are separate phases of the same OCS source. We don't see a basis in our regulatory and statutory authority to separate those phases into two separate OCS sources. Under the NSR program regulations, a stationary source is defined as any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant, and the

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regulations further provide that building, structure, facility, or installation means all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more continuous or adjacent properties, and are under common control. This regulatory definition does not provide us with a basis for treating different temporal phases of the same emission source as two separate stationary sources.

5. Can meteorological buoys become OCS sources?
 - Yes, meteorological buoys can become OCS sources if they meet the OCS source definition. Sources of emissions from a meteorological buoy can include, but are not limited to, backup diesel generators. See links in presentation for examples of two instances where we issued permits for meteorological buoys.
6. Are cable-laying vessels (CLVs) OCS sources?
 - Pull-ahead anchor CLVs and dynamically positioned CLVs are not OCS sources. We understand that pull-ahead anchor CLVs attach to the seabed, through the anchor system used to pull themselves up along the coastline or along the water, while dynamically positioned vessels do not. However, we don't view pull-ahead anchor CLVs or dynamically positioned CLVs as being erected thereon and used for the purpose of exploring, developing, or producing resources, which is part of our OCS source definition. See Southfork Wind permit fact sheet for more details on why these types of vessels are not OCS sources.
7. Are temporary emissions part of the OCS permit?
 - If an OCS source is subject to PSD permitting regulations, certain temporary emissions during construction may be excluded from the applicable air quality modeling analyses. See 40 C. F. R. 52.21(i)(3). Temporary emissions generally include construction emissions, but can also include emissions from a pilot plant, portable facility, or exploration activities. See [45 FR 52676, 52719](#), Aug. 7, 1980. For more information on the treatment of temporary emission, see permits issued to date.
8. Do construction emissions need to be offset?
 - Emission offsets are emissions reductions that provide a net air quality benefit in an area not attaining the NAAQS. Offsets are a requirement of the Nonattainment NSR preconstruction permitting program. Under CAA section 173(a)(1) and 173(c)(1), offsets are only required for operational emissions, not construction emissions. This approach is consistent with how we have historically implemented the Nonattainment NSR program onshore.

Other Applicable Requirements

- There are various other requirements that could apply to OCS sources based on our statutory and regulatory authority. Some of those requirements include NSPS in 40 C.F.R. part 60 and NESHAPs in 40 C.F.R. parts 61 and 63.
- For wind energy sources, there are two main NSPS/NESHAPs that apply: the NSPS for stationary compression ignition internal combustion engines (NSPS IIII) and the NESHAP for stationary reciprocating internal combustion engines (NESHAP ZZZZ).
- If a permit applicant is unable to comply with any of the control technology requirements in an NSPS or NESHAP, and/or the associated emissions testing requirements, the permit applicant may

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apply for a control technology exemption in accordance with 40 C.F.R. 55.7 or a performance testing waiver in accordance with 40 C.F.R. 60.8(b)(4). Examples of the use of the 40 C.F.R. 55.7 exemption can be found in various permits issued by EPA region 4 using the link provided in the presentation. EPA NSPS and NESHAP experts are available to assist project developers and regional offices on the requirements for seeking and granting the 40 C.F.R. 60.8(b)(4) waiver.

- There are other applicable federal statutes, EOs and federal requirements that apply to OCS air permits. For example, and although CAA permitting is not subject to NEPA, EPA relies on the NEPA ROD to comply with other applicable federal statutes such as ESA, NHPA, and MSFCMA. Under a memorandum of understanding between EPA and BOEM, BOEM has been designated as the lead agency in performing these analyses as part of the NEPA ROD process and EPA is a cooperating agency in this NEPA ROD process.
- EPA is also responsible for complying with Section 307 of the Coastal Zone Management Act (CZMA), addressing environmental justice considerations, and fulfilling tribal consultation and general conformity (GC) requirements.
- Under CZMA, EPA and the managers of a coastal zone coordinate the management of those coastal resources with the least impact to the marine environment as possible.
- Environmental justice is the just treatment and meaningful involvement of all people regardless of income, race, color, and national origin. If there is a particular environmental justice community close to an OCS source, there might be additional public outreach, studies, or other processes to address environmental justice considerations.
- EO 13175 commits federal agencies to engage in Tribal Consultation when federal actions have tribal implications. If there is a tribe close to the OCS source or a tribe has an interest in a particular OCS source that's being developed, EPA must consult and/or conduct outreach with those tribal nations to seek their input on a project.
- Emissions subject to PSD permitting are not subject to GC, but certain project emissions could still be subject to GC if they may cause or contribute to NAAQS violations.
- The presentation contains links to OCS air permitting resources available to the public on EPA's website (e.g., national OCS Air Permits webpage and the OCS Wind Energy Database).

Best Practices in OCS Air Permitting

Recap of EPA OCS Air Permit Timeline

- EPA staff presented the EPA OCS Air permitting timeline again to remind the seminar attendees of the four main milestones in the OCS air permitting process: submitting a NOI, submitting a complete application, issuance of the draft permit for public comment, and issuance of a final permit and response to comments document.

EPA staff discussed best practices in OCS air permitting. These include:

NOI

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- The first step of the air permitting process under the OCS regulations is the NOI submittal. The permit applicant should meet with EPA (or the applicable permitting authority) to discuss the NOI prior to submitting it. This would allow the developer to ask any questions, talk about any content that EPA may need to see, and provide an overview of the permitting process. The NOI must be submitted no more than 18 months before the air permit application.
- Requirements that should be addressed in the NOI are listed under 40 C.F.R. 55.4. The NOI only applies to sources located in the inner OCS. An NOI is required any time you make a physical change or change in the method of operation that results in an increase in emissions, or if you're submitting a new application. It must be submitted to the EPA administrator, the regional office where the project is located, the state air pollution control agencies of the nearest onshore area (NOA) and any onshore areas that are adjacent to the NOA. In the case of the Coastal Virginia Offshore Wind Commercial (CVOW-C) project in Virginia, the NOI was submitted by Dominion to Virginia and North Carolina because North Carolina is adjacent to the area where the project is occurring.
- Information in the NOI submittal typically includes the company information, a facility description, the proposed process and products, estimate of potential emissions of air pollutants (including emissions from associated vessels), an estimate of the types and quantities of fuel and any other raw materials to be used, a description of any air pollution control equipment, any proposed limits on source operations or any work practice standards to be employed that may affect emissions, other information affecting emissions including information related to stack information where it's appropriate, flow rates, equipment and other facility information. This information assists in determining the applicable permitting requirements.
- EPA is required to conduct a consistency review for sources located in the inner OCS once the NOI submission is received by the EPA, or whenever a state or local agency submits a rule to EPA to be considered for incorporation by reference into 40 C.F.R part 55. Consistency updates are regulatory actions to make the state regulations for inner OCS sources consistent with their onshore regulations in accordance with 40 C.F.R. 55.14. A link to EPA's Consistency Updates Index is in our presentation for reference. Once a source is constructed and operating, EPA is required to conduct these consistency reviews at least annually.
- Any state air pollution control agency that wants to be designated as the COA must submit a request to EPA within 60 days of the NOI submittal. State partners are encouraged to reference the regulations in 40 C.F.R. 55.12 regarding COA designation and reach out to the respective EPA regional offices if there are any questions on those designations.

Submitting a Complete Application

- For inner OCS sources, the permit application can only be submitted after EPA has determined if a consistency update is necessary and, if it's necessary, after the consistency update has been published in the Federal Register. For outer OCS sources, no NOI is required and there are no requirements for a consistency update since COA requirements do not apply in the outer OCS.
- If air quality modeling is required for a specific project, EPA recommends that permit applicants should submit their permit application only after the details of the project have been discussed

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during pre-application meetings between EPA (or the delegated permitting authority) and the permit applicant and after EPA's approval of the air quality modeling protocol.

- Content of an application is governed by the provisions at 40 C. F. R. 55.6(a)(1) and 55.6(a)(2). An application shall identify those requirements that would apply to the respective OCS source and shall describe how the source will comply with those requirements. This content depends on whether the OCS source is an inner or outer OCS source.
- There are two categories of applicable requirements:
 - Federal requirements at 55.13 which include NSPS, NESHAPs, PSD air quality regulations at 40 C.F.R. 52.21, and Title V operating permit programs at 40 C.F.R. 71.
 - Requirements at 55.14 that apply to inner OCS sources include those requirements that apply in the COA and are incorporated by reference into 40 C.F.R. 55.14 and listed in Appendix A to part 55. Examples of COA requirements are SIP-approved PSD, NNSR, and Title V permitting requirements, air regulations establishing nitrogen oxides, particulate matter, and opacity limits for combustion sources, emission limits for volatile organic compounds, and requirements to control emissions from storage tanks.
- This seminar presentation includes a non-exhaustive list of items that should be included in an application (e.g., basic information on the project, emission sources, potential to emit, details for emission units and activities that are anticipated to be OCS sources, requirements of the PSD and NNSR regulations, Title V requirements, Confidential Business Information claims) and examples of common reasons why an application might be determined incomplete.
- Please note that some states identify OCS air permits on their list of activities subject to consistency review in their federally approved CZMA programs. For OCS wind projects located near such states, the applicants are required to submit certifications to those states demonstrating that their projects are consistent with the respective state CZMA program rules. Complete OCS air permit applications must include a copy of the certification that was submitted to the state.
- After receiving a permit application, EPA reviews it for completeness. EPA follows the administrative procedures in either 40 C.F.R. part 124 "Procedures for Decision Making" or 40 C.F.R. part 71 "Federal Operating Permit Programs" for reviewing these applications. For all OCS air permit applications to date, the EPA has followed 40 C.F.R. part 124 administrative procedures. If the application is incomplete, EPA identifies the necessary information for the applicant in writing. A completeness determination starts the 1-year statutory deadline for a final decision on a PSD permit application. In the case of applications for initial Title V permits, renewals or significant permit modification, completeness is determined within 60 days of receiving the application. For this type of application, EPA must take final action within 18 months after receiving a complete application.

Draft Permit & Public Comment Period

- EPA (or the applicable permitting authority) sends a completeness determination letter to the permit applicant after an application is determined administratively complete and then EPA starts the technical review process which includes developing the draft air permit.
- EPA provides an opportunity for public comment on the agency's draft air permit and the fact sheet/statement of basis for the permit. There is a minimum 30-day comment period which may be

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extended upon request. Any person may submit written comments & request a public hearing. Public comments can be made directly to the permitting authority or at [regulations.gov](https://www.regulations.gov) for EPA-issued permits. Furthermore, and in accordance with 40 C.F.R. part 124, any person may request to be placed on a mailing list to receive notification of any permitting actions of interest to them.

- Comments received during the public comment period become part of the permit's administrative record. Draft permit fact sheets are not reissued in response to the public comments received, but applicable permit conditions may be revised because of those comments.
- After the public comment period closes, the regional office prepares the response to comments document, makes changes to the draft permit where appropriate, compiles the administrative record and issues the final permit decision accompanied by the response to comments document. EPA provides notice of the decision to the applicant and those members of the public who commented on the draft permit or requested to be notified.
- A final permit becomes invalid if construction is not commenced within 18 months after receipt of approval or if construction is discontinued for a period of 18 months or more. Any permit issued to a new OCS source or modification shall remain in effect till it expires or is rescinded.

Final Permit & Response to Comments

- After the final permit is issued, there's typically a 30-day period until the permit becomes effective. Within that 30-day period, interested parties can submit a request for an appeal. The filing of an appeal will delay final action (i.e., stay the permit) or will extend the time for final action on the permit. Appeals of EPA-issued permits or permits delegated to a state or local permitting authority are first heard by EPA's Environmental Appeals Board (EAB).
- The rules for this appeals process are set forth in 40 C.F.R. 124.19. The EAB's Practice Documents located on their website provide details on the appeals process, including good practical advice on preparing the EAB appeals themselves. The initial submission is a merits brief where the petitioner lays out its appeal arguments. Then there's an opportunity for the EPA and the permit applicant to submit responses before the EAB renders its decision.
- The EAB appeals process must be exhausted before judicial review is available. The CAA provides for judicial review of final permitting actions in the US Courts of Appeals.
- Where a state has delegated permitting authority, the delegate state may apply different administrative procedures.

Air Quality Modeling Requirements

EPA staff discussed air quality modeling requirements in OCS air permitting. These include:

Modeling protocol and model selection

- When the project requires a permit under the PSD program, facilities are required to demonstrate that they are not going to cause or contribute to a violation of a NAAQS or PSD increment (i.e., the maximum allowable increase of an air pollutant that is allowed to occur in an area). Air quality modeling is used to understand how a facility could impact air quality. In accordance with CAA §§ 165 and 320, EPA has specified air quality models or techniques for use in PSD permitting and other regulatory applications.
- Communication is key throughout the permitting process which starts at the pre-application meeting where the State and/or Federal permitting authorities discuss the permitting process with

the permit applicant and its representatives. Better communication contributes to a more streamlined permitting process.

- A modeling protocol (the protocol) is strongly recommended. The protocol defines the technical aspects of the compliance demonstration. A good project overview streamlines the protocol and we recommend that the protocol include at least the following: number of sources, location of sources, pollutants that need to be assessed and which ones are significant to the NAAQS or the PSD increment model selection process, domain setup, receptor configuration, meteorological and emission inputs, the sources and how they're being characterized, how the analysis will be performed, how the compliance demonstration will be set up, and how to demonstrate compliance with the standards. Feedback from the permitting authority may change the protocol details over time, but achieving permitting authority and permitting applicant agreement on the protocol early on streamlines the permitting process.
- Applicants can refer to the air quality analysis checklist available on EPA's Support Center for Regulatory Atmospheric Modeling (SCRAM) website for details and recommendations on how to develop the protocol.
- The *Guideline on Air Quality Models* (the *Guideline*) in 40 C.F.R. part 51 Appendix W provides recommendations and requirements for protocol development such as model selection, model inputs, and compliance demonstrations. The latest version of the *Guideline* was published on Jan. 17, 2017. A proposal to revise the *Guideline* was published Oct. 2023 and it is expected to be finalized by Summer 2024.
- Preferred air quality regulatory models are established through a formal public notice and comment process which eliminates the need for permit applicants to justify the use of these models in their permit applications if they're used as recommended/specified in the *Guideline*. Three preferred models are specified in the *Guideline*: American Meteorological Society (AMS)/EPA Regulatory Model (AERMOD), Complex Terrain Dispersion Model Plus Algorithms for Unstable Situations (CTDMPLUS), and Offshore and Coastal Dispersion model (OCD).
- OCD is the "preferred model" for OCS source air permitting. It is a straight-line Gaussian plume model used for a variety of source types and allows for treatment of the overwater plume and dispersion as it occurs overwater and as it interacts with the shoreline.
- Preferred models, however, aren't always appropriate for characterizing the source. EPA follows a defined regulatory process to approve alternative models (Section 3.2 of the *Guideline*) for regulatory applications. The authority to approve the use of an alternative model is delegated to the EPA regional offices. Therefore, communications related to the use of an alternative model for a permit application should occur with the regional office or delegated state/local permitting authority. EPA's OAQPS Model Clearinghouse ensures that the regional offices consider alternative models consistently across the agency. Alternative models must have a theoretical basis and go through a performance evaluation process to show they perform appropriately (see Section 3.2 of the *Guideline*) before they can be used in a permit.
- Alternative models can be approved in one of three ways:
 1. The alternative model is equivalent to the preferred model, which typically happens when people try to parallelize and use multiprocessors to produce modeling results.

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2. The alternative model performs statistically better than the preferred model.
 3. When there is no preferred model per Section 3.2.2(e), five criteria must be met to demonstrate that the new model is appropriate.
- OCD is an air quality model maintained on the EPA website, but EPA is not making scientific updates to OCD. OCD does not have all the current NO₂ screening options and is based on older dispersion theory and formulation (Pasquill-Gifford class versus the Monin-Obukhov class). AERMOD accounts for these formulation advancements, but AERMOD cannot be used overwater because the preprocessor to AERMOD—AERMET (AERMOD Meteorological Preprocessor) only works over land as it does not characterize the marine boundary layer. Fortunately, the Coupled Ocean Atmospheric Response Experiment (COARE) bulk flux algorithm can be used to augment either the meteorological preprocessor or independently, to provide the marine boundary layer information that AERMOD needs to further characterize and do source dispersion for offshore sources. Use of COARE allows AERMOD to be used for offshore permitting actions, but since AERMOD is not the default model in the *Guideline*, it is considered an alternative model that needs approval before being used in a permitting action.
 - There have been 11 alternative model approvals of the use of COARE and AERMOD since 2019. Details of those alternative models (i.e., Technical Support Documents, justification, formal responses, request, and response within the agency) are all in the Model Clearinghouse Information Storage and Retrieval System (MCHISRS) website. Those considering usage of AERMOD for offshore modeling can go to the MCHISRS website and search for COARE in the search bar or reach out to your regional office to answer any questions. The information from the existing alternative model approvals can be used as examples in your justification. In a pending regulatory update to the AERMOD Modeling System and the *Guideline*, EPA has proposed to incorporate the application of COARE in AERMET as a regulatory non-default option, thus removing the burden of having to request COARE/AERMOD as an alternative model for OCS air permit applications.

Modeling domain and Class I areas

- Modeled impacts are compared to the NAAQS and PSD increment. The PSD increment is the amount of air pollution that can be added to an airshed above a baseline concentration, and generally in a clean airshed that is well below the ambient air quality standards.
- The NAAQS have different averaging times and forms. Averaging times vary from an hour to a year. Averaging periods for the emissions going into the modeling must correspond to those averaging times so different emission rates are modeled based on the annual potential emission from the source units. For some forms of the NAAQS, no exceedance of the standard is allowed. This applies mostly to the annual long-term standards, whereas other forms are statistical and allow some exceedance of the air quality standard a few times per year.
- To show compliance with the NAAQS and PSD increment, the receptor grid needs to cover the entire area of ambient air (i.e., the areas for which the public has access) and must cover the areas of highest air pollutant concentrations. The first line of receptors in the domain are placed at the ambient air boundary. Areas excluded from ambient air may include a Coast Guard safety zone (often 500 meters), which may be in place temporarily during the construction phase of the

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project or in a period of heavy repair during the O&M period, since the public would be restricted from entering those areas.

- The EPA supports modeling approaches that take more conservative assumptions into account to simplify the modeling. The more conservative approach involves putting all the sources in one simple domain and conservatively modeling the overlapping of emissions from all sources. If compliance can't be shown through the simpler, conservative methods, then a more time and resource intensive, refined analysis is conducted. A more refined approach would account for the sources moving throughout the wind project with time.
- The EPA supports using a two-phase approach for making the required demonstration to meet PSD requirements:
 - The first phase is a single-source impact analysis where only the emissions from the source itself are modeled and compared to a significant impact level (SIL). If the project emissions are below the SIL, this may show that the source does not cause or contribute to violation of the standard without the need for additional cumulative analysis.
 - The second phase is a cumulative analysis that takes into account project emissions, background concentrations, and emissions from other nearby sources around the project.
- The PSD increment analysis follows similar steps as in the NAAQS analysis. But background impacts in PSD increment are handled differently.
- One important goal of PSD permitting is to ensure the project does not cause impacts on Class I wilderness areas. Class I areas have a tighter Class I PSD increment than Class II areas. Class I areas also have attributes referred to as air quality related values (AQRV) (e.g., visibility, acid deposition), which may not be adversely affected. A project may have to go through three tiers of modeling for Class I areas from a simpler screening approach down to a more refined approach. Projects in Region 1 have been far away from the Class I areas, so there has not been a need to screen at a higher tier. But projects further south in Region 2, near the Brigantine Wilderness area, have had to go through more complicated analysis to ensure Class I areas are protected.
- Certain "temporary" emissions may be exempted from the requirement to conduct a full air quality impact analysis if the emissions will not impact a Class I area or an area where an increment is known to be violated.
- Regulatory modeling requires a complete, accurate, representative set of meteorology that the model uses to determine the dispersion patterns downwind. There are three options for meteorological inputs for these permits:
 - Use an existing dataset, generally developed by federal agencies like National Oceanic and Atmospheric Administration (NOAA). For the OCS that would be a meteorological buoy. A 5-year dataset would be needed, but there may not be a buoy around an OCS project, or it may have data gaps.
 - The source goes through a monitoring program and deploys a buoy to collect at least a 1-year dataset at the project site, which may not be the most practical approach.
 - Use a 3-year prognostic meteorological dataset (i.e., weather model-derived meteorology).
- The technical preference is to use the most representative site-specific dataset. A lot of OCS projects have used prognostic meteorological datasets so far. Prognostic meteorology is similar to

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weather models used for forecasting weather, but instead of predicting the future, these models are diagnosing the past by inputting known measurements and information to produce the meteorology that occurred at a site. The EPA runs and produces an annual dataset for the entire continental United States, and it's a lower resolution, but it's been shown to perform well for the OCS. Prognostic meteorological datasets from academia or consulting firms can be used, but regardless of the dataset used, it needs to go through an evaluation report. The report needs to show favorable performance of the weather model that's being used to drive the regulatory dispersion model.

Source characterization and modeling construction emissions

- The air quality analysis requirements that are applicable to any OCS project that is subject to PSD are in 40 C.F.R. 52.21(k), (m) and (o). Subsection (k) requires the applicant to show that emissions increases from the project will not cause a violation of the NAAQS or PSD increment. Subsection (m) covers the preconstruction ambient monitoring requirements and subsection (o) describes the additional impact analysis. The purpose is to require an analysis that shows that an OCS project will not have adverse air quality impacts.
- The subsection (k) requirement can be addressed in a series of steps:
 - What are the potential emission rates of the project? Does that exceed the significant emission rate in PSD regulations?
 - If the answer is yes, you need conduct modeling to make the required showing.
 - If the answer is no, the demonstration can be made without modeling.
 - Is the single source impact analysis showing that the source has an impact over the SIL?
 - If the answer is no (impact below the SIL), this may be sufficient to make the demonstration and you are essentially done.
 - If the answer is yes (impact is over the SIL) there's a potential you can cause or contribute to a NAAQS or increment violation, and a cumulative impact analysis must be conducted.
 - Cumulative impact analysis for the NAAQS means looking at the emissions from your source, emissions from other sources in the area that are not included in the monitoring data, and the monitoring data.
 - If you show that there's compliance with the NAAQS and the increment you're done; you've demonstrated compliance.
 - If there is a violation of the NAAQS, the next step is to evaluate whether you cause or contribute to it. You need to assess your impacts at the time and place of the violation.
 - If you do cause or contribute, then you cannot get a permit unless you take steps to mitigate your impact on air quality.
 - If you don't cause or contribute, you can get your permit if other requirements are met.
- Regarding subsection (m), CAA requires that 1 year of preconstruction ambient monitoring be submitted prior to the application. You may evaluate the impact of the project and compare it to the significant monitoring concentration (SMC). If your impacts on air quality concentrations are

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less than the SMC that are in 52.21(i)(5)(i), you may be exempt from the preconstruction monitoring requirement. However, the $PM_{2.5}$ SMC promulgated in 2010 was challenged in court and vacated. So, you need to obtain this data for $PM_{2.5}$. Even though there is an SMC value in the regulations for other pollutants, EPA recommends that data be provided for the other pollutants as well.

- Another option is to find existing representative data to use instead of collecting your own data if there's a quality assurance. If a cumulative impact analysis is needed later in the process, ambient monitoring data will be needed and a lot of times the same ambient data could be used for both purposes, but it doesn't have to be. It will depend on what other sources that monitor is accounting for. If it's a remote/rural source like an overwater source where there aren't a lot of other activities nearby, the same data may be sufficient. If a lot of activities are going on in the area, you might want to use a monitor closer to a port that accounts for other marine vessels. Some analysis is needed to see which one is the better one for your case.
- The additional impact analysis, subsection (o), investigates impairment to visibility, soils and vegetation that would occur because of the source and the general commercial, residential, industrial growth that is associated. Assessing impacts on vegetation may not be necessary for an OCS project, but if the impact extends onto the shoreline, it may have to be considered.
- Certain construction-related emissions may be exempt from the requirement to conduct these air quality analyses if the emissions do not impact a Class I area or an area where an applicable increment is being violated and are temporary. In considering whether the emissions impact a Class I area, EPA evaluates whether impacts to the Class I area are less than the Class I area SILs and the Federal Land Manager confirms that there would be no potential adverse impact on the AQRVs. To show there is no impact on an area where there's a known increment violation, the applicant should confirm with the state that there are no existing violations of an increment. Usually, a letter from the state would be sufficient to meet this requirement. A 2-year period is generally considered "temporary". Given that OCS projects located in Region 2 are near a Class I area in New Jersey and have shown impacts above the SILs, and New York has a one-year limit for the construction period, OCS projects in Region 2 have had to conduct air quality analyses to address the impact from construction emissions. The O&M phase is not temporary.
- Two general approaches have been taken to configure the model to examine the impact of emissions from equipment located throughout a wind development area:
 - Cluster all the emissions into a single area to try to capture what is a worst-case day. For short-term impacts, we look to capture a snapshot of what a day could look like based on the source or even a neighboring source of emissions. This is simplistic but conservative.
 - The more refined option accounts for the spatial and temporal nature of emissions using the variable emission option in AERMOD. Allows the emissions to be varied and sequenced in a more logical pattern. The emissions of the first day are modeled, then the emissions or sum of emissions are modeled for the next location on the next day and so on until the two to three-year period is sequenced. This approach leads to larger file sizes and longer run times. Similar to the approach above, the entire meteorological period needs to be modeled to capture the worst-case day or year. The full meteorological database needs to be used to

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allow for operational flexibility because you don't know what the meteorological conditions will be, so you need to test it against all representative meteorological conditions unless you are willing to take permit conditions that only allow construction during certain times of the day or year.

- On the inner OCS, receptor placement starts overwater at the safety zone and extends outward until the impact is no longer significant. Receptors do not need to be placed on the outer OCS. Close coordination between the applicant and the permitting authority is strongly recommended.
- There are many sources of emissions during construction to model related to wind turbine foundations, substation foundations, top sides, other wind turbine generators being constructed nearby, scour protection, cable laying, associated vessels (e.g., heavy lift vessels, feeder barges, fuel bunkering, crew transfer vessels, marine mammal vessels). There are many vessels, and each vessel has a different number of engines, and each engine has a different Tier rating, so modeling gets complicated and complex.
- There are also emissions during the O&M phase. During the O&M phase, modeling is generally less complex. The PSD exemption for temporary emissions cannot be applied. Receptors are placed overwater in the entire modeling domain. There are usually fewer emission sources, so emissions go down quite a bit. For instance, many wind turbine generators have their own diesel generators and that needs to be modeled. Crew transfer vessels and service operation vessels should be accounted for. Maintenance can include some types of construction vessels such as a heavy lift vessel, so it needs to be included in this part of the analysis.
- Construction emissions are large with some in the order of several 1000 tons per year. The March 2011 intermittent emissions guidance generally should not be used to represent the spatial and temporal nature of the moving point sources. This guidance was meant for sporadic and infrequent emission sources, such as an emergency generator. In the case of construction emissions from OCS wind sources, these emission sources move around, but are continuous for several years and the different receptors are getting hit at the same time to varying degrees. That's especially important for the 1-hour NAAQS that are really a 3-year average or 5-year average depending on your data, so those are averaged across the years, and we cannot say that those are intermittent. Since there are different facilities and activities occurring nearby, the impacts can extend further out and can overlap, so we cannot dismiss or rule out that there's overlapping impacts. This could perhaps be considered for the O&M phase. Please consult with your regional office.
- The more controlling impacts tend to be the 1-hour NO₂ NAAQS, the 24-hour PM_{2.5} PSD Class II Increment and the AQRV impacts (i.e., visibility and deposition at the Class I area). Meeting these requirements have been a challenge in some permits, but EPA has worked with applicants to try to resolve these issues, including novel approaches for the 1-hour NO₂ NAAQS during the construction phase of a project through the combination of construction and O&M emissions across 3-years of data following the anticipated real-world construction scenario. Sometimes vessels aren't present in one location for an entire day, yet the increment or the NAAQS for PM_{2.5} is based on 24-hours; we have allowed a 4-hour block that was sequenced around the whole day to

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capture the entire day, but in smaller increments. We cannot average across non-operating hours unless there are permit restrictions that say you're not going to be operating during those hours.

- The maximum impacts tend to be overwater in the nearfield. It's crucial to continue ongoing discussions with the Federal Land Manager of the Class I area to develop mitigation measures, if necessary, to reduce Class I area impacts.
- Applications of regulatory air quality models should follow the *Guideline*. The modeling protocol is an essential piece of the process. Working out these procedures at the front end helps streamline the process at the end once the application comes in. Frequent communication is critical. Please do so before the application comes in, and you'll find that it's better in the long run. EPA and state permitting authorities are available to provide guidance and feedback on model inputs and compliance demonstrations.

Seminar Recap and Adjourn

Scott Mathias, EPA, Director of the Air Quality Policy Division in EPA's Office of Air Quality Planning and Standards, provided closing remarks:

- I want to reiterate the importance of early and frequent communication with the OCS air permitting authorities about the OCS permitting process. As Janet McCabe indicated at the beginning of this seminar, our mission is to issue permits, not to deny or delay permits.
- We are ensuring that we are adhering to our statutory and regulatory requirements in issuing permits.
- When we encounter challenging permitting issues, we have a large group of folks within the agency that are skilled problem solvers. We have internal work groups both on the technical and policy and legal side that meet regularly and discuss challenging issues and work diligently to find solutions.
- OCS air permitting is one of the largest priorities in OAQPS' Air Quality Policy Division and we give priority to providing timely feedback on challenging issues.
- Thanks for attending today's seminar.