

**THINGS THAT GO BURP IN THE NIGHT  
(PLUS SOME THAT DO IN THE DAY)**

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### **INTRODUCTION**

The earliest environmental regulations that affected oil and gas exploration and production activities were centered on the prevention of and response to oil spills and the control of water discharges and wastes. Eventually air issues began to be considered for onshore production facilities. However, the regulation of air emissions from OCS operations has only recently been developed. The purpose of this paper is to discuss these requirements.

### **BACKGROUND**

The Environmental Protection Agency (EPA) was given the responsibility for regulating air pollution from OCS sources located offshore of the States along the Pacific, Arctic, and Atlantic Coasts, and along the eastern Gulf of Mexico coast (off the coast of Florida) in Section 328 (Air Pollution From Outer Continental Shelf Activities) of the Clean Air Act (CAA) as amended in 1990. The U.S. Department of Interior's Minerals Management Service (MMS) retained the responsibility for regulating air pollution from sources located in the western Gulf of Mexico. EPA promulgated regulations to control air pollution from OCS sources in order to attain and maintain Federal and State ambient air quality standards and to comply with the provisions of part C of title I of the CAA.<sup>1</sup> The regulations were published in the September 4, 1992 Federal Register (57 FR 40792). Sources located within 25 miles of a State's seaward boundary must comply with the same State/local air pollution control requirements as would be applicable if the source were located in the corresponding onshore area (COA).<sup>2</sup> Sources located more than 25 miles from a State's seaward boundary (25-mile limit) must comply with EPA air pollution

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<sup>1</sup>Part C of title I of the CAA specifies requirements for the prevention of significant deterioration of air quality in areas where the air quality is better than the national ambient air quality standards for criteria pollutants. Sources which will be located within 25 miles of the State seaward boundary, and for which the corresponding onshore area is designated as nonattainment for one or more criteria pollutants, will have to comply with part D (Plan Requirements For Nonattainment Areas) of title I of the CAA.

<sup>2</sup>Section 328 of the 1990 CAA defines "corresponding onshore area," with respect to any OCS source, as the onshore attainment or nonattainment area that is closest to the source, unless the EPA Administrator determines that another area, with more stringent requirements with respect to the control and abatement of air pollution, may reasonably be expected to be affected by such emissions.

control regulations. The regulations are codified as part 55 of chapter I of title 40 of the Code of Federal Regulations (CFR).

Section 110 of the CAA requires all States to submit an implementation plan which contains a preconstruction review program for all new or modified stationary sources, including any provisions necessary for this program to meet the specific requirements of parts C and D related to construction. Section 110 of the CAA requires that no new or modified stationary source, in conjunction with emissions from existing sources in the same area, can interfere with the attainment or maintenance of the national ambient air quality standards (NAAQS). This effectively means that no source can construct without getting a permit to ensure that the objectives of the CAA are met. Construction activity begins with site preparation and ends when the source becomes operational. As in other industries, any equipment fabricated off-site should be constructed to meet permit requirements. These permit requirements must be met before equipment can be installed and approved.

Part C of the CAA outlines specific construction requirements for new and modified sources constructing in attainment areas. These requirements are more commonly referred to as those intended to prevent significant air quality deterioration. The prevention of significant deterioration (PSD) rules require a prospective source to demonstrate that the increment will not be exceeded, to demonstrate that the NAAQS will not be exceeded, to apply best available control technology (BACT), and to protect Federal Class I areas (e.g., national parks) from adverse impacts.

Similarly, part D of the CAA specifies construction requirements for new and modified sources constructing in nonattainment areas designated pursuant to section 107 of the CAA. Part D rules require a prospective construction project to ensure the application of lowest achievable emission rate (LAER), certify that all sources owned or controlled by the same person (or persons) are in compliance with all air emissions regulations, and secure additional reductions in existing source emissions beyond those necessary to show attainment and maintenance of the applicable NAAQS.

To be consistent with terminology used by the MMS, OCS sources associated with the recovery of oil and gas resources are characterized according to one of the following operational phases. The first phase consists of exploration activities that are conducted from temporarily placed vessels or structures. Drilling of an exploration or delineation well generally last 2 to 3-months, but can last up to 6 months. The second phase consists of the construction and installation of a permanent production platform on the seabed and the associated "topside" (above sea level) structures. A typical construction phase lasts from 6 to 12 months. The third phase consists of the development drilling of wells from which the oil and gas resources are extracted, and the long-term operations and maintenance of the production facility over the life of the field or structure. A typical development/production phase can last for over 30 years. These three phases are referred to as exploration, construction, and development/production, respectively.

## OVERVIEW OF REQUIREMENTS

### Activities for New or Modified OCS Sources under EPA Jurisdiction

- The owner or operator of a proposed new or modified OCS source that locates within the 25-miles limit is required to prepare a notice of intent (NOI) to construct. Not more than 18 months prior to submitting a permit application, the owner or operator must submit a NOI to construct to the EPA's Regional Office and to the air pollution control agencies of the nearest onshore area (NOA) and onshore agencies adjacent to the NOA.<sup>3</sup> This requirement is a one-time-only burden activity for the source.

### Activities for New and Existing Sources under the Regulatory Authority of Local Air Pollution Control Agencies

- Owners or operators of existing development/production sources that will be under the regulatory authority of local agencies will be required to obtain operating permits and will be subject to annual compliance testing, recordkeeping, and reporting requirements to demonstrate compliance with their operating permits. Since the exploratory wells operate only a short period of time (from 2 to 6 months), they are not required to obtain an additional operating permit.

### Activities for New and Existing Sources under the Regulatory Authority of EPA

- Owners or operators of new development/production facilities that are under the regulatory authority of the EPA will be required to obtain operating permits and will be subject to recordkeeping and reporting requirements to demonstrate compliance with their operating permits. This requirement is considered a one-time-only activity.

### State and Local Agency Activities

- State or local air pollution control agencies can formally request the EPA for the delegation of authority to implement and enforce the OCS regulations.
- The EPA has delegated authority to implement and enforce the OCS regulations to four local agencies in California (Santa Barbara County Air Pollution Control District (SBCAPCD), South Coast Air Quality Management District (SCAQMD), Ventura County Air Pollution Control District (VCAPCD), and San Luis Obispo County Air Pollution Control District (SLOCAPCD)). Those agencies will provide guidance to owners or operators of proposed new or modified sources for preparing NOI's and preconstruction permit applications, review permits for completeness, and conduct public hearings prior to permit approval. Those local agencies will also submit permit applications to the EPA and Federal Land Managers if the source's emissions potentially

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<sup>3</sup> As defined in Section 55.2 of the OCS regulation, "NOA means, with respect to any OCS source, the onshore area is geographically closest to that source."

affect Federal Class I areas. The agencies will also oversee and attend initial compliance tests after new or modified sources have completed construction under an approved preconstruction permit.

Those four local agencies will provide guidance to owners or operators of affected sources for preparing operating permits, overseeing and attending annual compliance tests, conducting quarterly inspections, reviewing reports submitted by owners or operators, and conducting public hearings prior to permit approval.

The authority for these requirements is contained in section 328 of the CAA and in EPA OCS Air Regulations, codified as title 40 CFR part 55. Section 328 requires the Administrator of the EPA to establish requirements to control air pollution from OCS sources to attain and maintain Federal and State ambient air quality standards and to comply with the provisions of part C of title I of the CAA. This requirement applies to OCS sources located in U.S. coastal waters except for the western Gulf of Mexico (west of longitude 87 degrees and 30 minutes). For sources located within 25-mile limit, such requirements must be the same as would be applicable if the source were located in the COA, and include but not be limited to State and local requirements for emission controls, emission limitations, offsets, permitting, monitoring, testing, and reporting. (Except for Florida, the seaward boundary of States is 3 miles from shore. For Florida, the seaward boundary is 3 leagues or approximately 9 miles from shore.) The Administrator must update the requirements as necessary to maintain consistency with onshore regulations. The authority of section 328 of the CAA supersedes section 5(a)(8) of the Outer Continental Shelf Lands Act, but does not repeal or modify any other Federal, State, or local authorities with respect to air quality. Each requirement established under section 328 is treated, for purposes of sections 113 (Federal Enforcement), 114 (Inspections, Monitoring, and Entry), 116 (Retention of State Authority), 120 (Noncompliance Authority), and 304 (Citizen Suits) of the CAA, as a standard under section 111 and a violation of any such requirements is considered a violation of section 111(e) of the CAA.

#### Requirements for the Western Gulf of Mexico

As previously mentioned the Western Gulf of Mexico remains under MMS jurisdiction for the purposes of compliance with the requirements of the Clean Air Act and other air issues. MMS is currently still taking a more general approach where details of the emission sources and potential to emit are provided along with some modeling of potential impacts on air quality if needed. The MMS is in the middle of a study to determine the potential impact of emissions from exploration and production facilities on the visibility in for example the Flower Gardens.

## **SPECIFIC REQUIREMENTS**

### **EPA Requirements**

#### NOI to Construct

The owner or operator of a proposed new or modified development/production sources that are located within the 25-mile limit is required to prepare a NOI to construct. The owner or operator must submit a NOI to construct to the EPA Administrator through the EPA Regional Office and the air pollution control agency of the NOA and adjacent onshore areas not more than 18 months prior to submitting a permit application. The purposes of the NOI are to (1) trigger an EPA review of onshore regulations to determine if they are consistent with the OCS regulations and, (2) to allow adequate time for onshore areas, other than the NOA, to determine if they will petition the EPA for designation as the COA.

#### Preconstruction Permit Applications

Compliance with all applicable preconstruction permit requirements is necessary before the owner or operator can commence construction or modification to its source. The owner or operator of an OCS source is responsible for developing or collecting all relevant information not otherwise available to the permit reviewing authority. The permit reviewing authority reviews the application materials submitted by the owner or operator and either declares the permit application complete for processing or provides the owner or operator with guidance on how to correct the deficiencies in the application. The applicant must then collect the additional data identified by the permit reviewing authority in order for the permit application to be deemed "complete." Although sufficient information must be submitted by the applicant before its permit can be classified as complete, some additional clarifying information can be submitted at a later date by the applicant to assist the permitting authority in processing the permit application.

For sources which will be constructed or modified in attainment areas, the permit application information will be used by the permit reviewing authority to determine whether the source will cause or contribute to a violation of PSD increments and NAAQS, whether BACT will be applied, and whether the source's emissions will adversely affect air quality related values in any Federal Class I areas. For sources which will be constructed or modified in nonattainment areas, the permit application information will be used by the permit reviewing authority to determine whether the source will apply LAER, achieve the required emissions offsets, and whether the source has demonstrated that all of its other sources are in compliance with all applicable air emissions regulations. The application and supporting data for permit decisions must also be made available to the general public for at least 30 days before the permit can be finally issued.

EPA operates a BACT/LAER Clearinghouse which contains many BACT and LAER determinations to aid sources and application reviewers in identifying reasonable control technology proposals. The BACT or LAER information in each permit is submitted for entry into the BACT/LAER Clearinghouse data base as a reference for making future control

technology determinations. Information on BACT and LAER determinations is available to the public through the National Technical Information Service and the EPA's Office of Air Quality Planning and Standards' Technology Transfer Network.

### Operating Permit Applications

New and existing development/production sources are also subject to operating permit requirements. For example, the SBCAPCD's Rule 210 requires existing development/production sources to obtain a permit to operate (PTO). Rule 210 also requires that a source's PTO be reviewed and updated once every 3 years. However, the new exploration sources only operate a short period of time (2 to 6 months), and the PTO is issued in conjunction with any new source review permit. The new development/production sources that will be under the EPA's regulatory authority will be required to obtain title V operating permits.

At a minimum, the operating permits contain information on the ownership and location of a source, equipment and fuel parameters which cause emissions, the amount and type of emissions from each source, control techniques used to control emissions, and recordkeeping and reporting requirements to ensure that control techniques are properly implemented. The information in operating permits is used by regulatory authorities to assess a source's compliance with the OCS regulations, to assess emissions fees, and to assess noncompliance penalties.

### Compliance Tests

Each new or modified source which completes construction under an approved pre-construction permit is required to complete initial compliance tests to demonstrate compliance with control equipment design and performance specifications in its pre-construction permit. The Title V regulations do not require owners or operators of sources to perform compliance tests to demonstrate compliance with their operating permits. Therefore, new exploration sources projected to be under the regulatory authority of the EPA are not be subject to initial/annual compliance testing requirements. The new development/production sources under EPA authority are subject to initial compliance tests.

### New or Modified Sources: NOI to Construct

New or modified sources that will be located within the 25-mile limit have to prepare and submit an NOI to construct not more than 18 months before submitting a permit application. The NOI must be submitted to the EPA Administrator through the EPA Regional Office and the air pollution control agency of the NOA and adjacent onshore areas. The data and information requirements that a source must include in a NOI to construct must include the following minimum information:

- General company information, including company name and address, owner's name and agent, and facility site contact.

- Facility description in terms of the process and products, including identification by SIC code.
- Estimate of the proposed project's potential emissions of any air pollutant, expressed in total tons per year and in such other terms as may be necessary to determine the applicability of requirements of section 55.4 of the regulation. Potential emissions for the project must include all vessel emissions associated with the proposed project in accordance with the definition of potential emissions in section 55.2 of the regulation.
- Description of all emission points including associated vessels.
- Estimate of quantity and type of fuels and raw materials to be used.
- Description of proposed air pollution control equipment.
- Proposed limitations on source operations or any work practice standards affecting emissions.
- Other information affecting emissions, including where applicable, information related to stack parameters (including height, diameter, and plume temperature), flow rates, and equipment and facility dimensions.
- Such other information as may be necessary to determine the applicability of onshore requirements.
- Such other information as may be necessary to determine the source's impact in onshore areas. Exploration sources are exempt from this requirement.

New or Modified Sources: Pre-construction Permit Applications

All new or modified sources are required to prepare and submit a pre-construction permit application.



The SBCAPCD's Rule 201 (Permits Required) requires the owner or operator of a new OCS source to obtain an ATC permit before the owner or operator can begin construction of the source. Paragraphs C.4, C.5, and C.6 of Rule 201 also specify the data which an owner or operator must include in a part D and part C ATC permit application.

The SBCAPCD's Rule 205 (Standards for Granting Applications) specifies the requirements that the owner or operator of a new source must meet before the SBCAPCD will issue an ATC permit. The requirements for part D and part C permits are specified in section 3.a and 3.b of Rule 205, respectively. The requirements contained in section 3.b of Rule 205 are similar to the requirements contained in EPA's part C PSD regulations. However, section 3.b is more stringent than the EPA's PSD regulations because section 3.b requires the owner or operator of a proposed new source to obtain emissions offsets from existing sources sufficient to offset all anticipated quarterly emissions increases associated with the new source.

Section 3.a of Rule 205 requires the owner or operator of a new source to prepare an ATC permit application to show that emissions which are precursors to ozone and PM-10 formation are controlled sufficiently to ensure that the source will not exceed the Federal and California ozone standards and the California PM-10 standard. Precursors to ozone formation include volatile organic compounds and nitrogen oxides. Precursors to PM-10 formation include volatile organic compounds, nitrogen oxides, and sulfur oxides. The requirements in the SBCAPCD's section 3.a are similar to the EPA's part D regulations. However, the SBCAPCD's rules are more stringent than the part D requirements in three respects. First, Rule 205 requires an emissions offset ratio of 1.2 to 1 where the part D emissions offset ratio is 1.15 to 1 for volatile organic compound emissions. Second, Rule 205 requires air quality modeling, but the EPA's part D regulations do not explicitly require air quality modeling.<sup>4</sup> Third, Rule 205 will require the owner or operator of a new source that will be located in a nonattainment area for a pollutant to obtain an ATC permit if the source will cause any increase in emissions that contribute to the formation of the nonattainment pollutant, where the EPA's part D regulations require the owner or operator of a source to obtain a pre-construction permit if the source's emissions exceed specified emissions thresholds.

#### New and Existing Sources: Operating Permits

Title V operating permits typically contain the following minimum information requirements:

- Ownership and location of the source;

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<sup>4</sup> The requirements for an air quality modeling may be waived by the SBCAPCD if (1) the applicant submits sufficient information to demonstrate that emissions from the new source will result in a net air quality benefit or, (2) the applicant will use new or innovative control technology which will result in a significantly lower emission rate than would have occurred with the use of previously known BACT, and which will likely serve as a model for technology to be applied to similar sources within the State.

- An inventory of the type and amount of emissions associated with each piece of equipment used at the source;
- Emissions control techniques for each piece of equipment; such techniques may include process design or operational changes to equipment, add-on control equipment, and inspection and maintenance procedures;
- Recordkeeping requirements to ensure that control techniques and inspection and maintenance procedures are being properly implemented;
- Annual compliance testing requirements;
- Reporting requirements for the periodic submittal of recordkeeping or test data for review by the regulatory authority.

The SBCAPCD's Rule 202 (paragraph (C)(h)) requires new exploration sources to obtain PTO's. According to the SBCAPCD, recordkeeping and reporting requirements are added to a source's ATC permit which is then converted to the source's PTO when the source is ready to become operational. The only additional data items a source must collect are associated with the recordkeeping requirements in its PTO. Under Rule 202 (paragraph (C)(h)(3)), owners or operators of drilling rigs are required to maintain a log-book of fuel use. The log-book is to contain the following entries:

- Name, identification number, and location of each well;
- Start and end dates of drilling;
- Daily fuel use as determined by dipstick measurement and fuel deliveries or other means approved by the SBCAPCD.

#### New and Existing Sources: Compliance Testing

New exploration and development/production sources are required to perform initial compliance tests to demonstrate compliance with the control equipment design and performance specifications in their pre-construction permits before they can obtain operating permits.

Annual compliance tests are required for existing development/production sources located within the 25-mile limit of California. The purpose of the annual testing requirements is to demonstrate that each source is in compliance with its operating permit.

#### New or Modified Sources: NOI to Construct

The following items are a comprehensive list of the activities that the owner or operator of a new development/ production OCS source will have to perform to prepare and submit an NOI to construct:

- Read applicable regulations to determine compliance requirements;
- Inquire or meet with the appropriate permit reviewing authority to obtain guidance on what data are needed to meet the applicable requirements;
- Prepare NOI to construct;
- Submit the NOI to construct to the EPA Administrator through the EPA Regional Office and to the air pollution control agency of the NOA and adjacent onshore areas.

New or Modified Sources: Pre-construction Permit Applications

The following items are a comprehensive list of the activities that the owner or operator of a new exploration or development/production source will have to perform to prepare a pre-onstruction permit application if the source is subject to part C PSD regulations:

- Read applicable regulations to determine compliance requirements;
- Inquire or meet with the appropriate permit reviewing authority to obtain guidance on what data are needed to meet the applicable requirements;
- Prepare BACT engineering analysis;
- Perform air quality modeling;
- Perform pre- and post-construction air quality monitoring (if not already available);
- Determine impacts on air quality related values in Federal Class I areas;
- Submit application to the U.S. Fish and Wildlife Service for endangered species impact analysis;
- Prepare and submit permit application;
- Attend public hearing;
- Revise permit application per comments received from the permit reviewing authority and/or public comments.

**MMS Requirements**

The MMS requires the following information to be submitted as part of the Exploration and Production Plan:

- Projected emissions from each proposed or modified facility for each year of operation and the basis on which the calculations were made. If the drilling unit that will be used is not known, worst case emission estimates must be used;
- For each source the emissions in tons per year;
- For each facility the total amount of emissions by air pollutant in tons per year. In the case of a modified facility the incremental amount of total emissions by air pollutant resulting from the modification must also be provided in tons per year;
- A detailed description of all processes, processing equipment and storage units including the fuel types and volumes;
- A schematic drawing showing the emission sources, including the location and elevation of each source;
- If emission controls are used a description of the control and the reduction efficiency;
- The distance of each facility from mean high water mark of any state;
- The models used to determine the effect of the emissions on onshore air quality;
- The meteorological data used in the model;
- The air quality status of any onshore area that would be significantly affected by the emissions from the facility (e.g. attainment or non-attainment);
- The emission reduction controls that are available, including a discussion of which one represents Best Available Control Technology (BACT), the emission reductions that will be achieved and how the emissions and the effectiveness of the control technology will be monitored.

## CONCLUSION

The introduction of extensive air permitting requirements will require operators and contractors to take into account air emissions and will require operators to come up with methods of minimizing the facility's potential to emit.