EPA's Oil and Gas Sector Greenhouse Gas Proposed Rulemaking

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Overview

- General information
- State plan development
- Requirements for specific sources
- Air permit certification for new and modified sources

Rulemaking Timeline

United States Environmental Protection Agency (EPA) proposal to reduce methane and volatile organic compounds (VOC) emissions from both new and existing sources in the oil and natural gas industry

Proposed Rules – NSPS

New Source Performance Standards (NSPS)

- Title 40 of the Code of Federal Regulations (40 CFR) Part 60, Subpart OOOOb
- Federal Clean Air Act (FCAA) §111(b)
- Reduces emissions of methane and VOC from sources that commence construction, modification, or reconstruction after November 15, 2021

Proposed Rules – NSPS Applicable Dates

Construction / Reconstruction / Modification Date	Applicable Rule
• After August 23, 2011, through September 18, 2015	• NSPS issued in 2012 (Subpart OOOO)
• After September 18, 2015, through November 15, 2021	• NSPS issued in 2016 (Subpart OOOOa)
• After November 15, 2021	• NSPS to be issued in 2023 (Subpart OOOOb)

Proposed Rules – EG

Emissions Guidelines (EG)

- 40 CFR Part 60, Subpart OOOOc
- FCAA §111(d)
- Limits methane emissions from existing sources built on or before November 15, 2021

State Plan Development

State plans due to the EPA within 18 months after the final Emissions Guidelines are published in the *Federal Register*.

Compliance deadline for existing sources must be no later than 36 months after the deadline to submit the state plan to EPA.

Proposal includes new requirements for meaningful public engagement.

Alternative Emission Limits

Proposed criteria for determining whether existing state programs can be considered equivalent to the EPA's presumptive standards

Proposed detailed criteria states must meet when applying a less-stringent emission standard to an existing source or class of existing sources, based on remaining useful life and other factors, like cost or technological feasibility

Who is Affected

Production & Processing

- Onshore well sites
- Storage tank batteries
- Gathering & boosting compressor stations
- Natural gas processing plants

Natural Gas Transmission & Storage

- Compressor stations
- Storage tank batteries

Abandoned / Unplugged Wells

- Find and fix leaks at all new and existing well sites, including wellhead-only sites and abandoned and unplugged wells
- Submit a well closure plan
- Continue monitoring well site for leaks until all wells are properly closed and plugged
- Conduct final monitoring survey after closure

Proposed Requirements

- Storage Tanks
- Pneumatic Pumps and Controllers
- Centrifugal Compressors
- Reciprocating Compressors

Storage Tanks

- Any affected storage tank is subject to requirements specified for tank batteries (Tank Battery Definition)
- Must reduce methane emissions by 95% if PTE ≥ 20 tpy for NSPS and EG.
- Must also reduce VOC emissions by 95% if PTE ≥ 6 tpy for NSPS
- Provides calculation methodologies for methane and VOC emissions.

Pneumatic Pumps and Controllers

Requires pneumatic devices to have zero emissions

Should not be driven by natural gas.

Exceptions for sites that do not have access to electricity.

Centrifugal Compressors

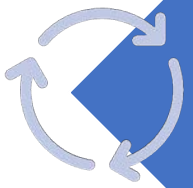
Wet seal compressors

- Minimum 95% emission reduction required by routing emissions to a control device or to a process.
- Existing sources – maintain volumetric flow rate ≤ 3 scfm to limit emissions

Dry seal compressors

- Maintain volumetric flow rate ≤ 3 scfm to limit emissions

Reciprocating Compressors



Maintain volumetric flow rate ≤ 2 scfm to limit emissions; or route emissions to a process via closed vent system

Replace rod packing and/or conduct repairs and maintenance

Periodic flow rate monitoring based on 8,760 hours of operation instead of a calendar year basis

Proposed Requirements

- Control
- Monitoring
- Miscellaneous
- Appendix K

Control Devices

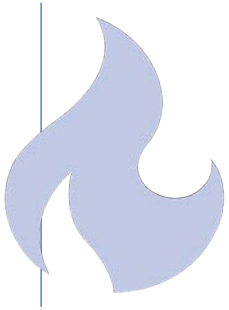
Control devices used for any affected facility must demonstrate that they meet a 95% VOC and methane emission reduction requirement

Additional requirements for flares and enclosed combustors:

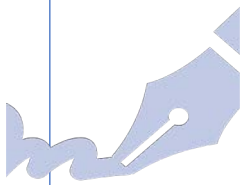
- Have continuous pilot flame with monitoring
- Be inspected for visible emissions
- Are monitored for net heating value
- Have a continuous flow monitor

Some alternative compliance options

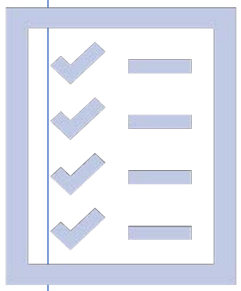
Associated Gas Control



Limits flaring of Methane and VOC emissions from associated gas from oil wells



Flaring only allowed if all four options are infeasible due to technical or safety reasons; demonstration must be approved by a certified professional engineer.



Requires monitoring and testing for flares / combustion control devices

Liquids Unloading Control

Requires well liquids unloading activities to have zero emissions, unless not feasible for safety or technical reasons

- Document infeasibility
- Employ best management practices (BMP) to minimize venting

Report unloading events annually, including BMP deviations if applicable

Fugitive Emissions Monitoring

Well Sites

- NSPS OOOO – None
- NSPS OOOOa – Semiannual OGI or Test Method 21
- NSPS OOOOb / EG OOOOc
  - Quarterly AVO (single wellhead) and Semiannual OGI (multiple wellheads)
  - Bimonthly AVO and Quarterly OGI (production equipment)

Compressor Stations

- NSPS OOOO – None
- NSPS OOOOa – Quarterly OGI or Test Method 21
- NSPS OOOOb / EG OOOOc – Monthly AVO and Quarterly OGI

Innovative and Continuous Monitoring

Technology-neutral approach

- Ties monitoring frequency to selected screening technology's minimum detection threshold, with same deadlines for repairs as OGI
- Multiple options under "matrix approach"

Continuous monitoring technologies option

- Continuously check for methane leaks to determine site-level emissions
- Similar approach to EPA's fenceline monitoring requirements for refineries

Establishes framework for EPA approval of other alternatives

Other Miscellaneous Requirements

Requirements for: covers and closed vent systems; equipment leaks at natural gas processing plants; and sweetening units.

Recordkeeping and reporting requirements

40 CFR Part 60 Appendix K – using optical gas imaging (OGI) for fugitive leak monitoring.

Appendix K

Co-proposed with NSPS OOOOb and EG OOOOc

Establishes protocol for using OGI, including:

- Camera specifications
- Performance verification
- Monitoring survey procedures
- Operator training requirements

Super-Emitter Response Program

Super-emitting event threshold ≥ 220.5 lbs/hr of methane (100 kg/hr)

Uses remote sensing technology

Regulatory authorities or EPA-approved third parties provide notification to owner/operator

Owner/operator must:

- Conduct a root cause analysis as applicable and take corrective actions
- Submit report to EPA for any affected facility; reports made available via public website

Permitting New or Modified Sources

Certification

- Form APD-CERT
- Establishes Federally Enforceable Limits for NSPS applicability
- Submitted electronically through website via STEERS
  - Unregistered Facilities
  - Registered Facilities

Permitting New or Modified Sources

Permit-by-Rule (PBR) Registration – Certified

- 30 § TAC 106.6(a) – Federally enforceable emission limits
- 30 § TAC 106.6(b) – Representations are enforceable
- 30 § TAC 106.6(c) – Revise certified registration as necessary

Standard Permit Registration

- 30 § TAC 116.615(2) – Representations are federally enforceable

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