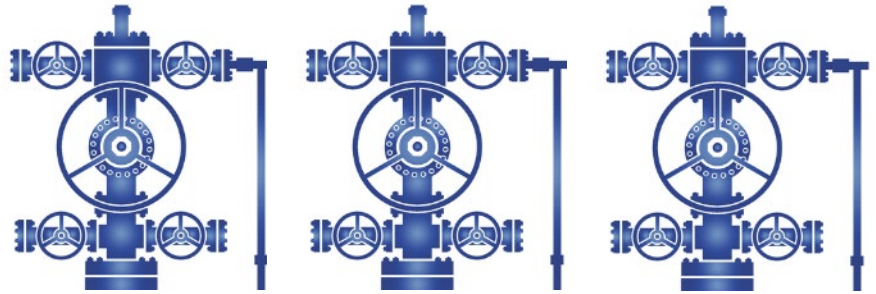
EPA's Final Rule to Reduce Methane and Other Harmful Pollution from Oil and Natural Gas Operations

Overview of Oil and Gas Rule for Small Businesses & Industry

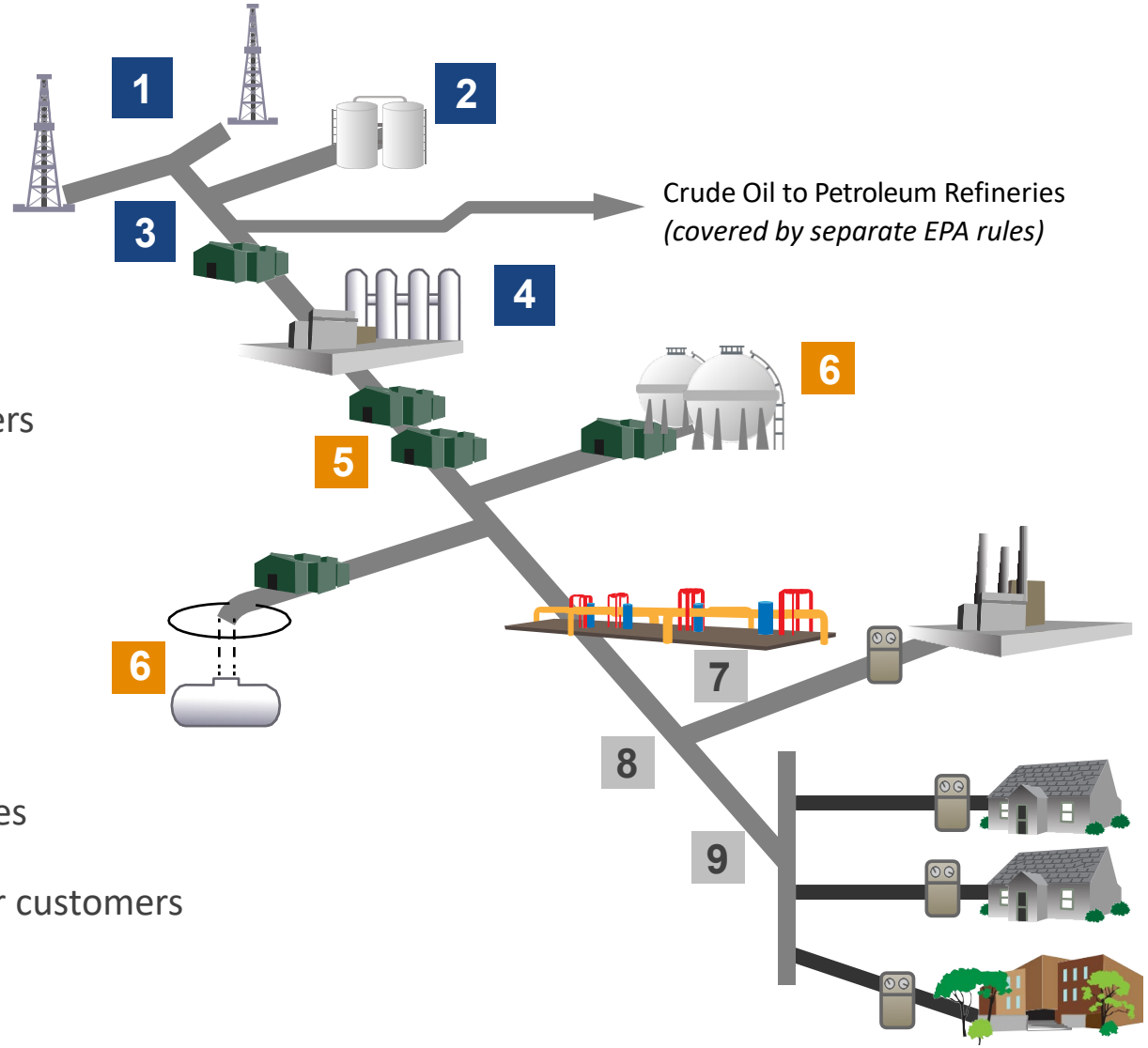
February 27, 2024



What We'll Cover Today

- Rule Applicability
- NSPS OOOOb Compliance Dates
- What's in the Rule?
- Advanced Methane Detection
- Super-Emitter Program
- Responding to Small Business' Concerns
- Emissions Guidelines & Compliance Date
- Benefits and Reductions

Crude Oil and Natural Gas Operations: Where EPA's Rules Apply



Production & Processing

EPA's methane proposal covers equipment & processes at:

1. Onshore well sites
2. Storage tank batteries
3. Gathering & boosting compressor stations
4. Natural gas processing plants

Natural Gas Transmission & Storage

EPA's methane proposal covers equipment & processes at:

5. Compressor stations
6. Storage tank batteries

Distribution

(not covered by EPA rules)

7. Distribution mains/services
8. City gate
9. Regulators and meters for customers

Figure adapted from American Gas Association and EPA's Natural Gas STAR Program

EPA United States Environmental Protection Agency

Oil and Natural Gas Sources Covered by EPA's Final New Source Performance Standards (NSPS) and Emissions Guidelines, by Site

Location and Equipment or Process Covered	Required to or Would Be Required to Reduce Emissions under EPA Rules (if finalized as proposed)	Rules that Apply			
		2012 NSPS for VOCs (OOOO)	2016 NSPS for Methane & VOCs (OOOOa)	2023 Final NSPS for Methane & VOCs (OOOOb)	2023 Final Emissions Guidelines for Methane (OOOOc)
Oil and Natural Gas Well Sites					
Completions of hydraulically fractured wells	✓	●	●	●	
Compressors at centralized tank batteries	✓			●	●
Fugitive emissions	✓		●	●	●
Liquids unloading	✓			●	●[1]
Pneumatic controllers	✓	●	●	●	●
Pneumatic pumps	✓		●	●	●
Storage vessels	✓	●	●[3]	●	●
Sweetening units	✓	●[2]	●[2]	●[2]	●[2]
Associated gas from oil wells	✓			●	●
Natural Gas Gathering and Boosting Compressor Stations					
Compressors	✓	●	●	●	●
Fugitive emissions	✓		●	●	●
Pneumatic controllers	✓	●	●	●	●
Pneumatic pumps	✓			●	●
Storage vessels	✓	●	●[3]	●	●
Sweetening units	✓	●[2]	●[2]	●[2]	●[2]
Natural Gas Processing Segment					
Compressors	✓	●	●	●	●
Fugitive emissions	✓		●	●	●
Pneumatic controllers	✓	●	●	●	●
Pneumatic pumps	✓		●	●	●
Storage vessels	✓	●	●[3]	●	●
Sweetening units	✓	●[2]	●[2]	●[2]	●[2]
Transmission and Storage Segment					
Compressors	✓		●	●	●
Fugitive emissions	✓		●	●	●
Pneumatic controllers	✓		●	●	●
Pneumatic pumps	✓			●	●
Storage vessels	✓	●	●[3]	●	●

All of the sources listed above are covered by EPA's Super Emitter Program

[1] Added in 2022 supplemental proposal

[2] Covered for SO_2 only

[3] Covered for VOCs only

What sources are covered by the rules and when do they take effect?

Subpart	Source Type	Applicable Dates
40 CFR part 60, subpart OOOO **(2012 NSPS for VOC)**	New, modified, or reconstructed sources	After August 23, 2011, and on or before September 18, 2015
40 CFR part 60, subpart OOOOa **(2016 NSPS for VOC and Methane)**	New, modified, or reconstructed sources	After September 18, 2015, and on or before December 6, 2022
40 CFR part 60, subpart OOOOb **(2023 NSPS for VOC and Methane)**	New, modified, or reconstructed sources	After December 6, 2022
40 CFR part 60, subpart OOOOc **(2023 EG for Methane)**	Existing sources	On or before December 6, 2022

The effective date for this rule is 60 days after *Federal Register* publication

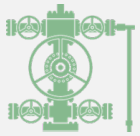
NSPS: When do I need to comply?

- **No later than 60 days after publication or upon initial startup, whichever date is later**

- Note differences in compliance dates for certain affected facilities
  - Reciprocating and centrifugal compressors
  - Storage vessels
  - Process units at gas plants

- Sources with phased-in compliance dates
  - Process controllers
  - Pumps
  - Associated gas

Highlights from the Rule

 Encourages Innovation	Provides owners and operators the flexibility to use a range of advanced monitoring technologies to identify leaks at well sites, centralized production facilities, and compressor stations
 Fugitive Emissions	Will ensure that **all** well sites, centralized production facilities, and compressor stations are routinely monitored for leaks
 Control Devices (Flares)	Refined monitoring to better ensure continual compliance
 Process controllers and pumps	Zero emissions standards that provide industry time to make the required adjustments

Highlights from the Rule(Cont.)

Associated Gas	Prohibits routine flaring from new sources and provides industry with time to comply
Storage Vessels	Clarifies and increases operators' accountability
Other sources	New standards for liquids unloading, updated standards for compressors, retained standards for well completions and sweetening units
Super Emitter Program	New program designed by EPA to provide transparency about super-emitter events

Controlling Air Pollution from the Oil and Natural Gas Operations

Oil and Natural Gas Air Standards Home
Basic Information
Actions and Notices
Implementation

Rule Website

https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-operations/epas-final-rule-oil-and-natural-gas

EPA's Final Rule for Oil and Natural Gas Operations Will Sharply Reduce Methane and Other Harmful Pollution.

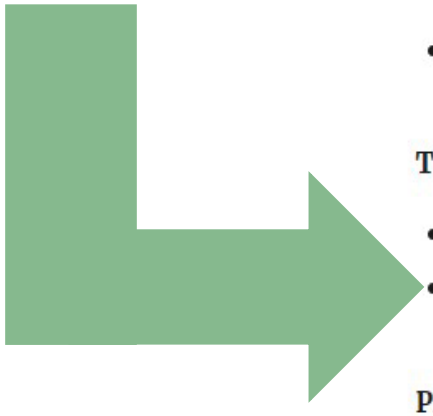
December 2, 2023 -- EPA has issued a final rule that will sharply reduce emissions of methane and other harmful air pollution from oil and natural gas operations — including, for the first time, from existing sources nationwide. The final action includes New Source Performance Standards to reduce methane and smog-forming volatile organic compounds from new, modified and reconstructed sources. It also includes Emissions Guidelines, which set procedures for states to follow as they develop plans to limit methane from existing sources. Oil and natural gas operations are the largest industrial source of methane pollution in the U.S.

Methane is a climate "super pollutant" that is more potent than carbon dioxide and is responsible for approximately one third of current warming resulting from human activities. Rapid, sharp cuts in methane can generate near-immediate climate benefits and are a crucial addition to cutting carbon dioxide in slowing the rate of warming of Earth's atmosphere.

Regulatory Documents

- Final Rule and Regulatory Text (pdf) (5.9 MB)
- Regulatory Impact Analysis (pdf) (3.3 MB)
  - Supplementary Material for the Regulatory Impact Analysis: Report on the Social Cost

Scroll down and click on this link!



Regulatory Documents

- Final Rule and Regulatory Text (pdf) (5.9 MB)
- Regulatory Impact Analysis (pdf) (3.3 MB)
  - Supplementary Material for the Regulatory Impact Analysis: Report on the Social Cost of Greenhouse Gases (pdf) (8.8 MB)
    Note: EPA reposted this file on 12/5/23 to correct bookmark errors.
  - Additional Information on the Social Cost of Greenhouse Gases Report

Fact Sheets

- Key Things to Know About EPA's Final Rule for Oil and Natural Gas Operations (pdf) (184.1 KB)
  - La EPA publica una norma final para reducir el metano y otros agentes contaminantes de las operaciones de petróleo y gas natural (pdf) (173.3 KB)
- EPA's Final Rule for Oil and Natural Gas Operations: Overview (pdf) (183.7 KB)
  - Cuestiones importantes a saber sobre la norma final de la EPA para reducir el metano y otros agentes contaminantes de las operaciones de petróleo y gas natural (pdf) (184.7 KB)
- Technical Fact Sheet: Appendix K: Requirements for Using Optical Gas Imaging, Applied to Natural Gas Processing Plants (pdf) (180.9 KB)

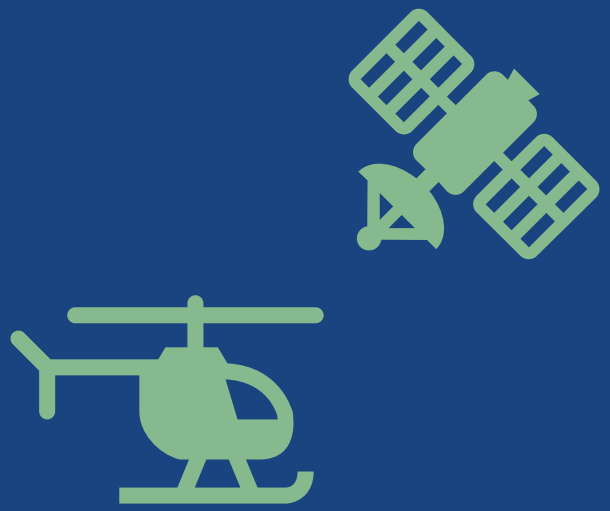
Tables

- Table of Covered Sources by Site: EPA's 2012, 2016 and 2023 Rules (pdf) (227.7 KB)
- Summary of Requirements: Final New Source Performance Standards and Emissions Guidelines (pdf) (248.2 KB)

Presentation

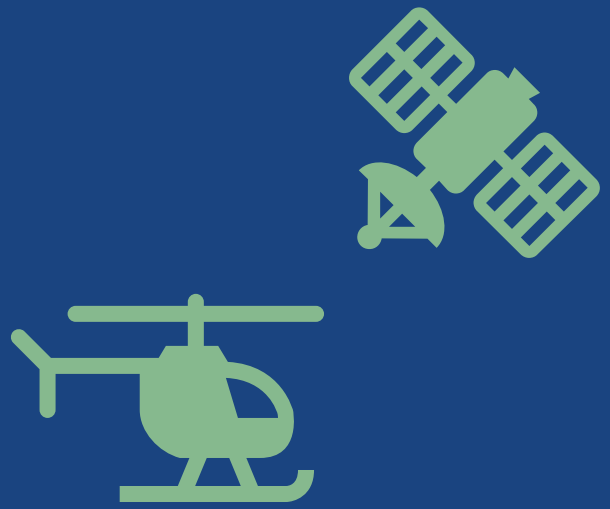
- EPA's Final Rule for Oil and Natural Gas Operations (pdf) (370.5 KB)

Advanced Methane Detection Technology Work Practices



- EPA has incorporated the use of advanced methane detection technologies in recognition of its fast and continual advancement
  - Uses for these technologies include performing Optical Gas Imaging and audio, visual, and olfactory (AVO) surveys
- These technologies may be employed as an alternative to ground-based OGI surveys, EPA Method 21, and AVO inspections to identify emissions from the collection of fugitive emission components situated at well sites, centralized production facilities, and compressor stations
- **To submit a request for an alternative test method for methane detection technology:**
  - Visit *www.epa.gov/emc/oil-and-gas-alternative-test-methods*)
  - EPA will complete an initial completeness review of submissions within **90 days**
  - An approval/disapproval will be issued in writing within **270 days** after receiving a request

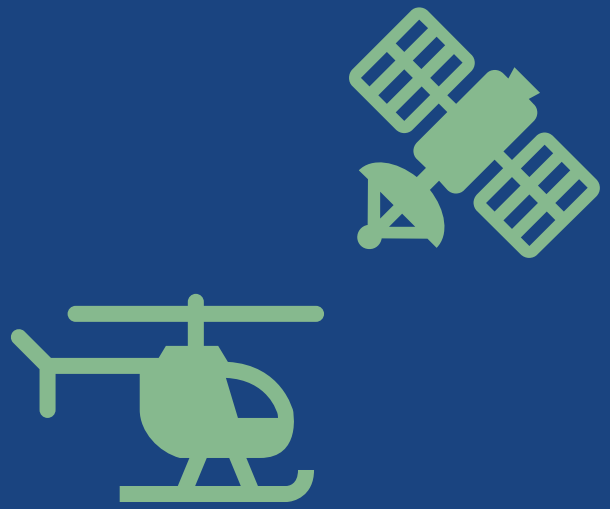
Advanced Methane Detection Technology Work Practices: Alternative Test Method for Methane Detection Technology



Alternative Test Method for Methane Detection Technology

- **What information is required in the request?**
  - The entity must provide the EPA:
    - Contact information for the requester
    - The desired applicability of the technology
    - A description of the candidate measurement technology system

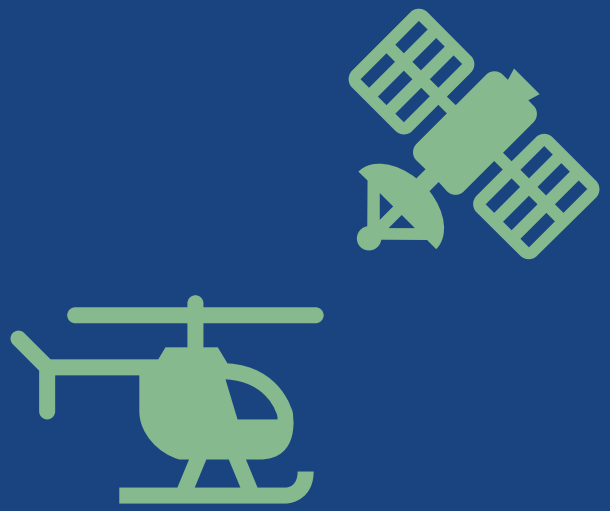
Advanced Methane Detection Technology Work Practices: Alternative Test Method for Methane Detection Technology



Alternative Test Method for Methane Detection Technology

- **What information is required in the request? (Cont.)**
  - The request must also include information on how the system converts results to a mass emission rate or equivalent and include the following:
    - Workflow and description covering all steps and processes
    - Description of how any meteorological data are used
    - Identification of any model(s) used
    - All calculations used
    - A-priori methods and datasets used
    - Explanation of any algorithms/machine learning procedures used in the data processing, if applicable
  - The request must also include:
    - A description of how data is collected, generated, maintained, and stored
    - How these data streams are processed and manipulated
    - A description of which data streams are provided to the end-user of the data

The Super Emitter Program: Background



A Super-Emitter event is an emission event which represents an emission that is >100 kg/hr and may have been emitted from one or more of the following:

- An affected facility or associated equipment subject to regulation under NSPS OOOO, OOOOa, or OOOOb
- A designated facility or associated equipment subject to a state or Federal Plan promulgated pursuant to EG OOOOc
- An unregulated source

Upon Receiving a Super Emitter Notification from the EPA (Based of information for a third-party), and owner or operator must:

- Determine if they own the identified site, and if so, is it subject to NSPS regulation?
- Investigate whether the site was the cause of the super-emitter event and whether it is ongoing.
- Report back to the EPA with information about their asset, what regulation it is subject, and potentially when the super-emitter event ended.

Small Businesses

The final regulatory flexibility analysis examined the impact of NSPS OOOOb on small entities and described regulatory alternatives EPA examined and finalized

- A copy of EPA's analysis and the Small Business Advocacy Review Panel Report is available for review in the rulemaking docket
- For more information: https://www.epa.gov/reg-flex/sbar-panel-review-oil-and-natural-gas-new-source-performance-standards

Next Steps: EPA is developing a Small Entity Compliance Guide for NSPS OOOOb

- It will be publicly available soon: https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-operations/implementation-oil-and-natural-gas-air#small

Addressing Small Business Concerns

Small Business Concerns	How These Concerns Were Addressed
Support for use of alternative technology as an alternative, not a requirement	• Final rule allows for the use of alternative screening technologies as a compliance option rather than an additional regulatory requirement
Fugitives Monitoring	• The final rule ties well site monitoring requirements to the type and amount of equipment on site and requires monitoring for all sites
How can small, existing sources comply with the Emission Guidelines?	• One example: The model rule for the Emission Guidelines allows owners and operators of existing oil wells that also emit associated gas to routinely flare that gas if they have documented methane emissions < 40 tons per year

Addressing Small Business Concerns

Small Business Concerns	How These Concerns Were Addressed
Use of Appendix K	• EPA finalized a protocol for the use of OGI for leak detection • The requirement to use Appendix K for OGI surveys will apply at natural gas processing plants
Reciprocating Compressors	• EPA finalized work practice standards with the allowance for repair in addition to replacement of the rod packing to maintain an emission rate at or below 2 scfm per cylinder • Monitoring based on 8,760 hours of operation instead of based on a calendar year • Finalized two regulatory alternatives for additional flexibility

Addressing Small Business Concerns

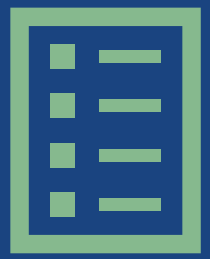
Small Business Concerns	How These Concerns Were Addressed
Centrifugal Compressors	• EPA finalized work practice standards • Finalized separate work practice standards for dry seal compressors and Alaska North Slope centrifugal compressors equipped with sour seal oil separator and capture system • Monitoring is based on 8,760 hours of operation instead of based on a calendar year
Liquids Unloading	• Affected facilities are to employ techniques or technologies that minimize or eliminate venting to the maximum extent • For events that result in venting owners or operators must employ best management practices • Events that employ non-venting technologies and techniques are only required to comply with minimal recordkeeping and reporting requirements

40 CFR Part 60 Subpart OOOOc Emissions Guidelines (EG):

In accordance with CAA section 111(d) and subpart Ba, OOOOc establishes EG and compliance schedules for the control of greenhouse gas (GHG) emissions from designated facilities in the crude oil and natural gas source category

- States must submit a state plan that implements the EG, or submit a letter of negative declaration if there are no designated facilities in state
- Federally recognized Tribes have the opportunity, but not the obligation, to develop their own plans
- Electronic submission for plans according to subpart Ba
- State plan submittal deadline: **24 months after publication of the EG**

Is my state required to engage with me as they develop their plan?



States can choose to leverage aspects of their existing programs for purposes of their plan submission

For a state or Tribal plan to be approved, the plan must include certain elements such as:

- Documentation of meaningful engagement as required by the Implementing Regulations (published November 17, 2023)
- Certification that a public hearing on the state or Tribal plan was held

Note: EPA is obligated to issue a federal plan that meets these same engagement requirements if an approvable state plan is not submitted

Emissions Guidelines: States May Apply a Less Stringent Standard Taking Into Consideration Remaining Useful Life and Other Factors (RULOF)

A state may apply a standard of performance to a designated facility that is less stringent than otherwise required by the EG, provided requirements specified in Subpart Ba are met

OOOOc (EG) Does Not Directly Regulate Designated Facilities

Designated facility owners and operators must comply with their state, Tribal, or federal plan

States may choose to incorporate the model rule text directly in their state or Tribal plan

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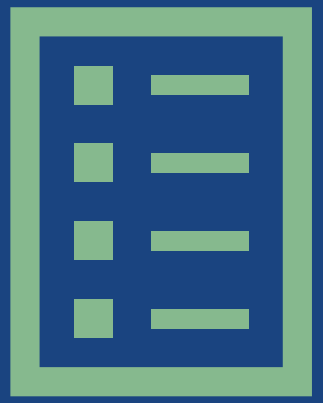
EG OOOOc Includes a Model Rule



The model rule language can be used as part of the state or Tribal plan, but states and Tribes are not required to use the model rule language

State or Tribal plans must be at least as protective as the model rule, or comply with RULOF requirements

The model rule contains the nine major components listed

EG OOOOc Compliance Schedule

Each plan must include compliance schedules

- OOOOc compliance schedule is “as expeditiously as practicable” but no later than 36 months after the deadline of the state plan submittal
  - Longer compliance schedule requires RULOF
- The plan must include legally enforceable increments of progress to achieve compliance for each designated facility or category of facilities

In Summary: Roadmap to EG OOOOc Implementation

What are the benefits of the new regulations?

Help fight the climate crisis and protect human health by reducing greenhouse gas and VOC emissions from the oil and natural gas industry

- Historic reductions in methane pollution (Est. 58 million tons)
- Reductions in smog-forming VOCs (Est. 16 million tons)
- Reductions in air toxics like benzene (Est. 590,000 tons)

Net climate and ozone (smog) health benefits from 2024 – 2038 ($2019)

- $97 to $98 billion dollars
  - Equivalent of $7.3 to $7.6 billion a year
  - After accounting for the costs of compliance and savings from recovered natural gas

More information is available on EPA's website

Website for the final rule:

https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-operations/epas-final-rule-oil-and-natural-gas

If you have questions about the rule, please email:

O&GMethaneRule@epa.gov

Questions & Answers