

# EPA Methane Rules

Air Quality Technical Advisory Committee – March 9, 2023

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# NSPS Rule Background

- ▶ August 2012: First NSPS (Subpart OOOO) finalized
  - Affected Facilities: August 23, 2011 - September 18, 2015
- ▶ June 2016: Updated NSPS (Subpart OOOOa) finalized
  - Affected Facilities: after September 18, 2015 – November 15, 2021
- ▶ September 2020: Policy and technical amendments
  - Policy: Remove transmission/storage segment and remove methane requirements
  - Technical: Updates to fugitive standards
- ▶ June 2021: Congressional Review Act to rescind policy amendments

## NSPS Rule Background (cont'd)

- ▶ General applicability for the Crude Oil and Natural Gas Sector:
  - Crude oil production includes the well and extends to the point of custody transfer to the crude oil transmission pipeline or any other forms of transportation
  - Natural gas production, processing, transmission, and storage, which include the well and extend to, but do not include, the local distribution company custody transfer station
    - ◆ Note: T&S re-instated by Congressional Review Act
- ▶ Regulated sources include storage vessels, natural gas driven pneumatic pumps and controllers, fugitive components, compressors, well completion activities

# NSPS Subparts OOOOb/c Timeline

- ▶ November 2021 proposals:
  - NSPS OOOOb: Affected facilities after November 15, 2021
  - NSPS OOOOc: Affected facilities on or before November 15, 2021
- ▶ NSPS OOOOb – emission standards for new/modified sources
  - Emission limits/standards for VOC and methane
- ▶ NSPS OOOOc – emission guidelines for state rule development
  - Emission limits/standards for methane
  - Generally the same requirements as NSPS OOOOb
- ▶ November 2022 supplemental proposal for both NSPS OOOOb/c
  - Additional items for comment
  - Comment period ended February 13, 2023

# Proposed Emission Standards (0000b/c)

- ▶ Zero emission standards
  - Pneumatic pumps (collection of both piston and diaphragm) with tiered structure for other options (e.g., if site power unavailable)
  - Pneumatic controllers (collection of all controllers)
- ▶ Maintenance to maintain flow rate below applicable level
  - Reciprocating compressors
  - Wet seal centrifugal compressors (0000b requires control)
  - Dry seal centrifugal compressors (new source after December 6, 2022)
  - Exceptions for compressors at well sites

## Proposed Emission Standards (Cont'd)

- ▶ Storage vessels (now collectively regulated as tank batteries) – 95% control of vessels with PTE:
  - Greater than 6 tpy VOC and 20 tpy methane (OOOOOb)
  - Greater than 20 tpy methane (OOOOOc)
- ▶ Define requirements for “legally and practically enforceable”
  - Production and operational limits
  - Averaging period for production limits < 30 days
  - Parametric limits and initial compliance demonstration
  - Ongoing parametric monitoring
  - Recordkeeping and reporting
- ▶ Sweetening units (OOOOOb) – SO<sub>2</sub> reduction

## Proposed Emission Standards (Cont'd)

- ▶ Well liquids unloading for each loading activity for new wells (OOOOb) and each loading activity for existing wells (OOOOc)
  - Zero methane emissions unless safety or technical reasons prevent
  - Reporting unloading events annually
  - Document infeasibility as applicable
  - Develop and implement BMPs
  - Note deviations from BMPs in annual report
- ▶ Oil wells with associated gas – direct to sales line
- ▶ Well completion activities consistent with current rules

## Proposed Emission Standards (Cont'd)

- ▶ Fugitive source leak detection and repair programs
  - Well sites type and frequency vary by equipment located at source ranging from quarterly AVO for wellhead only to bimonthly AVO and quarterly OGI monitoring for sites with major production equipment
  - Compressor stations monthly AVO and quarterly OGI monitoring
  - Processing plants bimonthly OGI monitoring
- ▶ Appendix K co-proposed to outline requirements for OGI monitoring (limited to processing plants in these proposed rules)
  - Training and auditing requirements
  - Specified inspection procedures



# Proposed Alternative Monitoring Options

- ▶ EPA proposing alternative periodic screening options as part of leak detection and repair program in accordance with the following matrix

Sites with Quarterly OGI Requirements		Sites without Quarterly OGI Requirements	
Minimum screening frequency	Minimum detection threshold of screening technology (kg/hr)	Minimum screening frequency	Minimum detection threshold of screening technology (kg/hr)
Quarterly + Annual OGI	≤1 kg/hr	Semiannual	≤1 kg/hr
Bimonthly	≤2 kg/hr	Triannual	≤2 kg/hr
Bimonthly + Annual OGI	≤10 kg/hr	Triannual + Annual OGI	≤5 kg/hr
Monthly	≤4 kg/hr	Quarterly + Annual OGI	≤15 kg/hr
Monthly + Annual OGI	≤30kg/hr	Monthly + Annual OGI	≤30kg/hr

## Proposed Alternative Monitoring Options (cont'd)

- ▶ Leaks detected during screening must be followed up with OGI inspection
- ▶ Continuous monitoring included as an option provided
  - Quantification possible (i.e., hourly emission rate) and
  - Action levels for short term (7 days) and longer term (90 days) threshold levels
- ▶ Includes framework to get other monitoring alternatives approved by EPA

# Proposed Control Device Requirements

- ▶ Making control device requirement consistent for all affected facility control devices and increased compliance requirements
  - All flares must be 60.18 compliant
  - Installing calorimeter for BTU measurements for control devices (including flares)
  - Adding low flow rate for manufacturer tested devices
- ▶ Closed Vent Systems
  - OGI monitoring on same frequency as fugitives (i.e., quarterly)
  - No detectable emissions replaced with no identifiable emissions

# Super Emitter Program

- ▶ New program developed for both rules
- ▶ Parameters include:
  - 100 kg/hr threshold
  - EPA-approved entity or regulatory authority can notify operator
  - If notified, operator will need to do Root Cause Analysis and if an affected facility is involved, then a report must be submitted to EPA (becomes public)
  - Goal is to be available immediately after publication using existing technology
  - Remote sensing only (aircraft, mobile, satellite)
  - Third party verification will be pre-approved by EPA

## Additional Items

- ▶ EPA solicited comments on multiple aspects during each proposal
- ▶ Following operations were not included in either proposal:
  - Blowdowns/pigging
  - Truck loading operations
- ▶ Abandoned well management is addressed through continuing leak detection and repair program until properly plugged
- ▶ Inflation Reduction Act implementation and integration with these rules will be addressed in subsequent rulemaking

# Emission Guideline Implementation

- ▶ EPA issued additional information in supplemental proposal to address state implementation plans
  - Can be more stringent than emission guidelines
- ▶ Criteria for equivalence comparison in state rulemaking:
  - Designated facility
  - Designated pollutant
  - Standard is same type/format
  - Emission reduction
  - Compliance assurance requirements
- ▶ EPA discouraging sector wide reduction comparison of equivalence (likely too hard)

## Emission Guideline Implementation (cont'd)

- ▶ Comparison of equivalence must include same sources
- ▶ Cannot use existing state VOC rule limitation to craft these rules (must be GHG based)
- ▶ EPA expects challenging comparisons for work practice requirements
- ▶ EPA expecting “meaningful engagement” with “pertinent stakeholders” during rule development process
  - EPA considering input on criteria of each term
- ▶ States have 18 months to develop and submit implementation plans to address guidelines, with maximum of 36 months for compliance from submittal of plan

# General Considerations/Challenges

- ▶ Significant number of comments across both proposed rules
- ▶ New source date (November 15, 2021) and compliance deadlines
  - Implementation challenges (e.g., supply chain and availability concerns)
  - Changes of affected facility definition
- ▶ Super emitter program
  - Novel program in NSPS rules
  - Emission threshold
  - Qualifications for third party verification
  - Follow up requirements and reporting elements



# General Considerations/Challenges

- ▶ Emission guidelines for existing sources generally same requirements as new sources
  - Interim emission reductions already completed may not match proposed guidelines
- ▶ Equivalency determination and remaining useful life considerations
- ▶ Timing for rule development that meets EPA's expectations
- ▶ Additional rulemaking forthcoming to implement updated reporting and methane tax
- ▶ Timing of final rule – summer/fall 2023

