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EPA Super Sizes Proposal to Crack Down on Methane from Oil and Gas Sector

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This article is the second in a two-part series analyzing recent proposals by federal agencies to reduce methane emissions from oil and gas production. The first article addresses the Bureau of Land Management's (BLM) Proposed Rule.

On December 6, 2022, EPA published a supplemental proposed rule (Proposed Rule) to reduce methane and volatile organic compound (VOC) emissions from oil and natural gas facilities, including first-time presumptive standards for **existing** oil and gas facilities. 87 Fed. Reg. 74,702. The Proposed Rule, which follows an initial proposal and request for comment on November 15, 2021, will have important (and costly) implications for oil and gas operations if finalized as proposed. Comments are due on **February 13, 2023**.

This rulemaking is proposed under Section 111 of the Clean Air Act (CAA) and builds upon existing New Source Performance Standards (NSPS) for emissions of methane and VOCs from oil and natural gas sources that are constructed, modified, or reconstructed after November 15, 2021 (NSPS OOOOb) while setting aggressive presumptive standards for methane emissions from existing sources (EG OOOOc). EPA's proposed approach includes the following major elements that would apply to **both** new and existing sources, which are discussed in more detail below:

- **Fugitive Emissions**: Ties fugitive emissions monitoring requirements to the types and amount of equipment at a site rather than to estimated emissions and increases frequency of monitoring for all sources.
- **Alternative Monitoring**: Allows facilities (and regulators) a wider selection of methane detection technologies for fugitive emissions monitoring in lieu of OGI surveys or EPA Method 21.
- **Well Closure**: Imposes ongoing fugitive monitoring requirements until wells are plugged according to well closure plan submitted to permitting authority.
- **Flaring:** Restricts flaring to times when there is no other feasible route to a sales line or other beneficial use.
- **Super-Emitter Response Program**: Creates a new program requiring owners and operators to undertake a root cause analysis and take prompt corrective actions when an approved third party detects large methane emissions events.

- **Pneumatic Controllers, Pneumatic Pumps, and Centrifugal Compressors**: Requires the use of zero-emissions pneumatic controllers and pumps at both new and existing facilities. Pneumatic pumps at an affected facility could not be driven by natural gas.

NSPS OOOOb

The Proposed Rule follows up on EPA's earlier NSPS regulations for the oil and natural gas sector at 40 CFR part 60, subparts OOOO ("Quad O") and OOOOa ("Quad Oa"), which imposes various requirements depending on the date of construction, modification, and reconstruction.

EG OOOOc

The Proposed Rule also includes the first nationwide emissions guidelines for states to limit methane from **existing** oil and gas facilities under EPA's authority to establish standards of performance for existing sources in CAA § 111(d). The Proposed Rule would create a new subpart OOOOc ("Quad Oc") requiring states to regulate methane from existing oil and gas facilities. States would be required to submit plans to EPA within 18 months after final guidelines are published in the Federal Register. State would then be required to impose a compliance deadline on existing source no later than 36 months after the plan is due. EPA states in the Proposed Rule that compliance with the state or Federal plan implementing Quad Oc would constitute compliance for sources currently regulated by Quad O and Quad Oa, since the proposed presumptive standards would result in the same or greater emission reductions.

Major Elements

Totaling 146 pages with another 600 pages in regulatory text (NSPS OOOOb and EG OOOOc) available in the rulemaking docket, EPA's Proposed Rule contains extensive provisions to reduce emissions of methane and VOCs from the oil and natural gas sector. Along with similar regulatory actions, the Proposed Rule is a crucial part of the Biden Administration's agenda to combat climate change and reduce emissions from the oil and natural gas sector.

The key requirements of the Proposed Rule include:

Fugitive Emissions

EPA's Proposal Rule would expand on the 2021 proposal by requiring regular inspections of **all** wellheads, no matter their input. The Proposed Rule ties fugitive emissions monitoring requirements to the types and amount of equipment at a site rather than to estimated emissions. Under the Proposed Rule, single wellhead-only sites would be required to undergo quarterly audio, visual and olfactory (AVO) inspections. Wellhead-only sites with two or more wells would be required to undergo quarterly AVO inspections and semi-annual monitoring using optical gas imaging (OGI) surveys or EPA Method 21.

For centralized production facilities or sites with major equipment, EPA

would require AVO inspections every other month and quarterly monitoring using OGI or EPA Method 21. Compressor stations would require monthly AVO inspections and quarterly monitoring using OGI or EPA Method 21. Well sites and compressor stations on the Alaska North Slope would be subject to a different annual monitoring requirements to account for the weather.

The Proposed Rule also includes deadlines for leak repairs depending on the how the fugitive emissions are identified. Owners and operators would be required to complete repairs of leaks identified through AVO inspections within 15 days after the first repair attempt. Leaks identified through OGI surveys would have slightly longer, with first attempts at repair required within 30 days and final repairs to be completed in 30 days from the first attempt.

Alternative Monitoring

EPA's Proposed Rule would allow facilities a wider selection of methane detection technologies for fugitive emissions monitoring in lieu of OGI surveys or EPA Method 21. As an alternative, EPA has proposed a screening “matrix” which would specify several different screening frequencies corresponding to a range of minimum detection levels. Additionally, EPA's Proposed Rule would allow facilities the option of using continuous monitoring systems as an alternative to periodic screening. The Proposed Rule would also establish a streamlined process for EPA to approve alternative test methods. Once EPA approves a technology and technique, owners and operators would then have approval to use it going forward.

Well Closure

EPA's Proposed Rule would also require fugitive emissions monitoring to continue for the life of the well until it was properly closed. Owners and operators would be required to submit a well closure plan, which would entail a plan for plugging all wells, documentation of financial assurance, and a schedule for completion. The Proposed Rule would require owners and operators to conduct a final OGI survey to ensure no continuing emissions and make repairs, if necessary. Once the OGI survey confirms no emissions are present, EPA would consider the site closed and fugitive emissions monitoring would cease.

Flaring

EPA's Proposed Rule would also greatly restrict flaring by limiting it only to times when there is no other feasible route to a sales line or other beneficial use. Associated gas could not be routed to a flare unless an operator demonstrated that all options were infeasible due to a technical or safety reason and the demonstration was approved by certified professional engineer. EPA's Proposed Rules would also require continuous monitoring to ensure the pilot was burning at all times.

Super-Emitter Response Program

Based upon recent studies showing that the very largest methane emissions events (super-emitters) at sources (often cause by malfunctions or abnormal operating conditions) are responsible for the majority of total emissions, EPA is proposing the creation of a super-emitter response program to prevent, detect, and repair these super-emitter events (defined as quantified emissions of 100 kg/hr or greater of methane).

The new response program would allow EPA-approved third parties to identify these super-emitter events using specific remote detection methods (i.e., remote-sensing aircraft, mobile monitoring platforms, or satellite) and then notify owners and operators when an event is detected. Once notified, owners and operators would be required to perform a root-cause analysis within five days and take corrective actions within 10 days if the event is caused by a malfunction or abnormal operation. Corrective actions taking longer than 10 days would require submittal of a corrective action plan to EPA or the state agency. By harnessing citizen-led enforcement and advanced technology, this new initiative is part of a **broader and fundamental change** in how industry is regulated.

Pneumatic Controllers, Pneumatic Pumps, and Centrifugal Compressors

Lastly, EPA's Proposed Rule establishes standards for pneumatic controllers, pneumatic pumps, and centrifugal compressors at both new and existing facility. Since the Proposed Rule will also apply to existing facilities, owners and operators would be required, in some cases, to retrofit facilities.

Under the Proposed Rule, pneumatic pumps at an affected facility could not be driven by natural gas. Owners at sites with no onsite power would have to route emission from gas-driven pumps to a process on site unless infeasible. If infeasible, emissions control requirements would depend on the number of pumps on site. For pneumatic controllers, the Proposed Rule updates the definition of a pneumatic controller-affected facility from a single controller to a collection of natural gas-driven pneumatic controllers at a well-site. Self-contained natural gas pneumatic controllers, as well as controllers routed to a sales line or used for onsite, would still be permitted but would not be allowed to directly emit methane and VOCs. Finally, the Proposed Rule sets requirements for new and existing dry seal centrifugal compressors by requiring owners or operators to maintain the volumetric flow rate at or below 3 standard cubic feet per minute.

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