

# NSPS OOOOa

## The EPA's proposed New Source Performance Standards and what they mean for the Oil and Natural Gas Sector

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On August 18, 2015, the U.S. Environmental Protection Agency (EPA) released a prepublication version of 40 CFR Part 60 – New Source Performance Standards (NSPS) OOOOa – Oil and Natural Gas Sector – Emission Standards for New and Modified Sources. This version was submitted to the Federal Register for publication. The much anticipated proposed rule amends the 2012 NSPS OOOO - Standard for the Oil and Natural Gas source category by establishing standards for both methane and volatile organic compounds (VOC) for certain equipment, processes, and activities. According to EPA, methane is the second most prevalent greenhouse gas (GHG) emitted in the United States. Natural gas and petroleum systems are the largest source of methane emissions from industry in the United States, accounting for about 29 percent of the methane emissions emitted in this country. The current Administration's Climate Action Plan – Strategy to Cut Methane Emissions, targets the oil and natural gas source category with

requirements for reducing methane emissions 40 to 45 percent below 2012 levels by 2025.

The proposed amendments include additional standards for methane and VOC for certain new, modified, and reconstructed equipment, processes, and activities. The proposed methane and VOC standard includes the following emissions sources:

- Hydraulically fractured oil well completions
- Pneumatic pumps
- Fugitive emissions from well sites and compressor stations
- Hydraulically fractured gas well completions
- Equipment leaks at natural gas processing plants
- Equipment such as pneumatic controllers and centrifugal and reciprocating compressors with the exception of compressors located at well sites

The 2012 NSPS OOOO - VOC standard included some of the above source categories; however,



methane was not regulated for any source category. The GHG reporting rule Subpart W for petroleum and natural gas systems requires only the annual reporting of the six greenhouse gas emissions at oil and natural gas facilities, compressor stations, and natural gas processing plants.

Trihydro's "white paper" on the proposed NSPS OOOOa will focus on fugitive emissions and the compliance and monitoring requirements for oil and gas wells, compressor stations, and natural gas processing plants. The proposed amendments also include improvements to several aspects of the existing LDAR standards related to implementation.

### **Fugitive Emission Requirements: Well Sites and Compressor Stations**

The proposed rule requires fugitive emission surveys at new and modified well sites and compressor stations. EPA has broadened the compressor station definition to include compressors at natural gas transmission, storage, gathering, and booster stations. EPA is proposing optical gas imaging (OGI) surveys followed by repair of leaking components as the best system of emission reduction (BSER). An OGI leak is defined as a visible image of gas emissions to the atmosphere.

The proposed definition of an "affected facility" for well sites includes the collection of fugitive emission components associated with any oil, gas, or injection well including the well pad. The "affected facility" for compressors includes new and modified natural gas compressors. The components subject to methane and VOC surveys for oil and natural gas well sites and natural gas compressors includes all ancillary equipment (e.g., valves, connectors, open-ended lines, pressure relief valves, closed vent systems, access doors, flanges, thief hatches).

For oil and natural gas well sites, equipment subject to monitoring would include equipment in the immediate vicinity of the well that is necessary for

production including separators, storage vessels, heaters, and dehydrators. EPA is exempting from fugitive emissions requirements well sites that contain only wellheads. These sites do not have ancillary equipment and, as such, have extremely low fugitive emissions. In the proposed rule, EPA is also exempting low production well sites (i.e., defined by the combined oil and natural gas production of less than 15 barrels per day) over the first 30 -days of production.

**Facilities will be required to develop and implement a site monitoring plan that specifies the measures for locating fugitive emission sources and the detection technology used for follow up monitoring.**

The proposed compressor standards require that the OGI survey include distance piece vents, crankcase vents, and blowdown vents similar to the current Subpart W standards for compressors with the exception that NSPS OOOOa requires not only reporting but the repair of leaking components. Devices that vent as part of "normal operations", such as natural gas- driven pneumatic controllers or natural gas – driven pumps are not fugitive emission components. However, emissions such as those from seals around the bellows of a diaphragm pump would be considered fugitive emissions.

For the purpose of the proposed fugitive emission standards at well sites, EPA is defining a "modification" to a well site as the addition of a new well or the fracturing or refracturing of an existing well. These two events would increase emissions based on the addition of fugitive components (e.g., piping and equipment) at the well site.

EPA is proposing that modification to a compressor station would occur when a compressor is added or when a physical change is made to an existing compressor that increases the compression capacity. Fugitive emissions from compressor stations are sourced to compressors and associated piping and connections. It is implied that other equipment at the compressor station would not be subject to fugitive emissions monitoring; however, EPA needs to provide further clarification in the final rule on these requirements.

Owners or operators with new and modified well sites and new and modified compressor stations will be required to conduct an initial OGI survey within 30 – days of startup or modification. After the initial monitoring event, surveys would then be required semiannually for new and modified well sites and compressor stations.



The standards would require replacement or repair of components followed by a resurvey within 15 calendar days after detection, if evidence of fugitive emissions is detected through visible confirmation from the OGI survey. EPA is proposing that

either Method 21 or an OGI survey be used for follow up monitoring. The leak threshold for repaired components using Method 21 would be defined as non – detectable emissions at 500 ppm above background whereas an OGI survey would be visible confirmation of the leak through the infrared (IR) camera.

EPA is proposing a “skip period” provision from semiannual to annual monitoring for well sites and compressor stations with less than one percent leaking components during two consecutive semiannual monitoring surveys. As proposed, if during a subsequent monitoring event the leak rate is between one and three percent of the surveyed components then the frequency reverts back to semiannually. If a well site or compressor station has greater than three percent leaking components during two consecutive semiannual events the survey frequency would adjusted to quarterly.

Facilities will be required to develop and implement a site monitoring plan that specifies the measures for locating fugitive emission sources and the detection technology used for follow up monitoring. EPA recommends that each monitoring plan address instrumentation, conducting an OGI survey in adverse monitoring conditions, operator training, and dealing with IR camera interferences such as steam.

### **Fugitive Emission Requirements: Natural Gas Processing Plants**

Based on several studies EPA concluded that the BSEER for reducing methane emissions from equipment leaks at natural gas processing plants is an LDAR program equivalent to the current standards cited in NSPS OOOO which reference NSPS VVa. Thus, EPA is considering this level of program at natural gas processing plants. It is noteworthy, that EPA is not proposing any changes to the current Subpart A definitions for modification or reconstruction as related to natural gas processing plants.



Following publication of the 2012 NSPS OOOO rule, EPA recognized that additional clarification was needed based on reconsideration petitions and discussions with affected parties. These clarifications referenced in NSPS OOOOa as related to LDAR program implementation includes:

- NSPS OOOO – Requires the lower leak rate definitions for pumps (2,000 ppm) and valves (500 ppm) and annual connector monitoring.
- Capital Expenditure – NSPS OOOO does not define “capital expenditure” for those affected natural gas processing plants that are reviewing modification. This implies that the technique used to determine modification under NSPS OOOO is the same as cited in NSPS KKK (i.e., based on the definition of “capital expenditure” in NSPS VV. However, the year that is the basis for calculating Y (the percent replacement cost) is the year of the proposed standard. In the case of NSPS OOOO it is based on 2011. One additional clarification to the capital expenditure equation involves “annual asset guideline repair allowance – B value” where EPA is requiring the use of 4.5 rather than the 12.5 as cited in NSPS VVa.
- LDAR Implementation – EPA clarified that each facility owner or operator subject to LDAR provisions demonstrate compliance within 180 - days of initial startup. This provision applies to all new, modified, and reconstructed sources.

## Overlapping Rule Requirements

In this proposed rulemaking, EPA acknowledges an overlap with several existing regulations including Subpart W which requires the annual reporting of GHG's for certain compressor stations that exceed the 25,000 Metric Ton CO<sub>2</sub>e threshold. EPA is requesting stakeholder comments on the overlapping rule requirements for compressor stations subject to Subpart W. In addition to

Subpart W, overlapping requirements are apparent to current and future Department of Interior's Bureau of Land Management (BLM) rules covering production of natural gas on Federal Lands. Various states have or are in the proposal process of implementing methane rules (i.e., monitoring, record keeping and reporting) and, as such, understanding these requirements and determining whether these conflict with NSPS OOOOa will be most important.

## Conclusions

It is anticipated that a proposed NSPS OOOOa will be published in the Federal Register within the next 30 days. Similar, to other proposed NSPS rules an effective date will be established when the proposed rule is published. It is anticipated that a 60 – day public comment period and two public meetings will be extended to all stakeholders. The current Administration has a robust climate change agenda in 2016; therefore, it is anticipated that this proposal will be a final rule next year.

The proposed NSPS OOOOa overlaps with several current NSPS regulations, Subpart W and state methane rules. It will be important for those invited to comment on the proposed NSPS OOOOa rule to drive consistency in work practice standards and definitions.

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