GAS COMPRESSOR ASSOCIATION

40 CFR 60 NSPS Proposal Summary

12/08/2021

Rule Update Validation Highlights[1]

EPA was required to review current regulations in response to President Biden's Executive Order entitled, "Protecting Public Health and the Environment and Restoring Science," to tackle the Climate Crisis. In developing the response proposal, EPA utilized data from State level regulatory action in conjunction with company outreach that are using the latest science and technology to reduce methane emissions.

From the data collected, the EPA developed a proposal that focuses on reducing methane and VOC emissions produced by the oil and gas industry. Validation for the emission reductions is centered around health harm and disproportionately affected communities. Much of the proposal focuses on proportioning cost and ton reduction.

Under section 111(b) of the Clean Air Act, the EPA must set NSPS and Emission Guidelines for each type of source by applying the "best system of emission reduction." To develop the proposed BSER, EPA evaluated potential control measures that are available for sources covered by the rule (new technology), along with the emission reductions those control measures could achieve, factoring in the cost of achieving those emission reductions, along with "non-air" health and environmental impacts, and energy requirements.

Proposed Emission Guidelines for Existing Sources – How EPA justifies regulating existing sources under "New Source Performance Standards."

Emissions Guidelines do not impose requirements directly on sources. They establish procedures for states to follow as they develop SIPs (State Implementation Plans[2]) that establish, implement, and enforce performance standards for "designated facilities," the term defined by EPA for existing sources. The proposed guidelines include "presumptive standards" for the same types of facilities that are covered by the NSPS, except for well completions and liquids unloading, which always are considered new or modified sources. *Most* of these presumptive standards, which are based on the BSER for existing sources, mirror the standards EPA is proposing for new sources.

Tribal Lands & Existing Sources

Existing sources located in Indian country would not be included in a state's plan. Eligible tribes would have the opportunity, but not the obligation, to develop their own plans that establish performance standards for existing source on their tribal lands. If a tribe does not submit a plan, or if EPA does not approve a tribe's plan, then the Agency has the authority to establish a Federal Plan for that tribe.

[1] https://www.epa.gov/system/files/documents/2021-11/2021-oil-and-gas-proposals.technical-overview-fact-sheet-11.2.2021.pdf

[2] SIP Process - Once the Emissions Guidelines are final, states must submit plans that establish standards that generally are as stringent as the presumptive standards. As a plan is developed the State must provide a forum for meaningful public engagement, normally in the form of a public notice and comment period. Once a state adopts its plan, it must then submit it to EPA for approval. If a state does not submit a timely plan, or if EPA disapproves a state plan, the Agency must issue a Federal Plan for that state and the SIP process begins again.

Future Take Away

EPA plans to propose updates shortly in a separate rule to establish SIP implementation timelines that will generally apply to all of EPA's future Emissions Guidelines under Clean Air Act section 111(d), including a deadline for states to submit plans to EPA for review once an Emissions Guideline is final.

Proposed and Presumptive Standards

The proposal includes standards that apply to equipment, processes and activities used in the production of crude oil and in the production, processing, transmission, and storage of natural gas.

1. Comprehensive monitoring program to require companies to find and fix leaks (known as "fugitive emissions") at new and existing well sites and compressor stations.
    a. Well sites with estimated emissions of 3 tons per year or would be required to monitor for leaks using optical gas imaging (OGI) or Method 21 quarterly and promptly repair any leaks found.
    b. EPA estimates sites emitting 3 tons or more per year are responsible for approximately 86 percent of all fugitive emissions from well sites. Leaks must be at least 60 days apart, but no more than four months apart.
    c. Well sites with estimated emissions of less than 3 tons per year would be required to promptly conduct a survey (and perform repairs as needed) to demonstrate they are free of leaks or malfunctions but are not required to undertake ongoing monitoring.
    d. EPA is co-proposing a requirement that sites with estimated emissions between 3 and 8 tons per year be monitored semi-annually, rather than quarterly.
    e. Surveys must include inspections of equipment that is most prone to large leaks and malfunctions, including hatches on storage tanks and flares
    f. All new and existing compressor stations would monitor and repair leaks on a quarterly basis.
    g. Sources on the Alaska North Slope would have different monitoring schedules to account for weather.

2. EPA is proposing to give owners/operators the flexibility to use advanced methane detection technologies for leaks surveys at well sites and compressor stations. Any technology that meets a rigorous minimum detection threshold would be allowed. Surveys using these advanced technologies would be required at least once every two months, and any leaks found would have to be repaired. To ensure that smaller leaks are detected, these surveys must be supplemented by annual monitoring using optical gas imaging or EPA Method 21[3].

3. EPA's proposal would require all new and existing pneumatic controllers in production, processing, and transmission and storage facilities to have zero methane and VOC emissions, apart from sites in Alaska that do not have power. EPA's proposal would extend current requirements for new pneumatic pumps to include all-natural gas-driven diaphragm and piston pumps in the production segment of the industry, and diaphragm pumps in the transmission segment. These standards require pneumatic pumps with access to an onsite control device to reduce emissions by 95 percent. For existing sources, the presumptive methane standards for pneumatic pumps would mirror those proposed for the NSPS but exclude piston pumps.

[3] Appendix K – Protocol for using Optical Gas Imaging to Detect Volatile Organic Compound and Greenhouse Gas Leaks

PART 60-- STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES Subpart OOOOa—Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015 – RED LINE SUMMARY

Part Covered	Citation
Am I subject to this subpart?	§60.5365a
What GHG and VOC standards apply to centrifugal compressor affected facilities?	§60.5380a
What GHG and VOC standards apply to reciprocating compressor affected facilities?	§60.5385a
What GHG and VOC standards apply to pneumatic controller affected facilities?	§60.5390a

The following experts are included in the redline proposal for NSPS OOOOa.

§60.5365a - Am I subject to this subpart?

Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

Each reciprocating compressor affected facility, which is a single reciprocating compressor. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

Each pneumatic controller affected facility. (1)Each pneumatic controller affected facility not located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh. (2) Each pneumatic controller affected facility located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller.

§60.5380a - What GHG and VOC standards apply to centrifugal compressor affected facilities?

(a)(1) You must reduce methane and VOC emissions from each centrifugal compressor wet seal fluid degassing system by 95.0 percent. (2) If you use a control device to reduce emissions, you must equip the wet seal fluid degassing system with a cover that meets the requirements of §60.5411a(b).

The cover must be connected through a closed vent system that meets the requirements of §60.5411a(a) and (d) and the closed vent system must be routed to a control device that meets the conditions specified in §60.5412a(a), (b) and (c). As an alternative to routing the closed vent system to a control device, you may route the closed vent system to a process.

§60.5385a - What GHG and VOC standards apply to reciprocating compressor affected facilities?

You must replace the reciprocating compressor rod packing according to either paragraph (a)(1) or (2) of this section, or you must comply with paragraph (a)(3) of this section.

(1) On or before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of your reciprocating compressor affected facility, August 2, 2016, or the date of the most recent reciprocating compressor rod packing replacement, whichever is latest.

(2) Prior to 36 months from the date of the most recent rod packing replacement, or 36 months from the date of startup for a new reciprocating compressor for which the rod packing has not yet been replaced.

(3) Collect the methane and VOC emissions from the rod packing using a rod packing emissions collection system that operates under negative pressure and route the rod packing emissions to a process through a closed vent system that meets the requirements of §60.5411a(a) and (d).

§60.5390a - What GHG and VOC standards apply to pneumatic controller affected facilities?

Pneumatic controllers meeting the conditions in paragraph (a) of this section are exempt from the requirements in paragraph (b)(1) or (c)(1) of this section.

(a) The requirements of paragraph (b)(1) or (c)(1) of this section are not required if you determine that the use of a pneumatic controller affected facility with a bleed rate greater the applicable standard is required based on functional needs, including but not limited to response time, safety and positive actuation. However, you must tag such pneumatic controller with the month and year of installation, reconstruction or modification, and identification information that allows traceability to the records for that pneumatic controller, as required in §60.5420a(c)(4)(ii).

(b)(1) Each pneumatic controller affected facility at a natural gas processing plant must have a bleed rate of zero.

(2) Each pneumatic controller affected facility at a natural gas processing plant must be tagged with the month and year of installation, reconstruction or modification, and identification information that allows traceability to the records for that pneumatic controller as required in §60.5420a(c)(4)(iv).

(c)(1) Each pneumatic controller affected facility at a location other than at a natural gas processing plant must have a bleed rate less than or equal to 6 standard cubic feet per hour.

(2) Each pneumatic controller affected facility at a location other than at a natural gas processing plant must be tagged with the month and year of installation, reconstruction or modification, and identification information that allows traceability to the records for that controller as required in §60.5420a(c)(4)(iii).

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60 [EPA–HQ–OAR–2021–0317; FRL–8510–02– OAR]

RIN 2060–AV16

Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing

Sources: Oil and Natural Gas Sector Climate Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule. SUMMARY

Relevant Tables

TABLE 1—APPLICABILITY DATES FOR PROPOSED SUBPARTS ADDRESSED IN THIS PROPOSED ACTION

Subpart	Source type	Applicable dates
40 CFR part 60, subpart OOOO	New, modified, or reconstructed sources	After August 23, 2011 and on or before September 18, 2015.
40 CFR part 60, subpart OOOOa	New, modified, or reconstructed sources	After September 18, 2015 and on or before November 15, 2021.
40 CFR part 60, subpart OOOOb	New, modified, or reconstructed sources	After November 15, 2021.
40 CFR part 60, subpart OOOOc	Existing sources	On or before November 15, 2021.

TABLE 2—SUMMARY OF PROPOSED BSER AND PROPOSED STANDARDS OF PERFORMANCE FOR GHGS AND VOC
[NSPS OOOOb]

Affected source	Proposed BSER	Proposed standards of performance for GHGs and VOCs
Fugitive Emissions: Well Sites with Baseline Emissions >0 to <3 tpy[1] Methane.	Demonstrate actual site emissions are reflected in calculation.	Perform survey to verify that actual site emissions are reflected in calculation.
Fugitive Emissions: Well Sites ≥3 tpy Methane.	Monitoring and repair based on quarterly monitoring using OGI[2].	Quarterly OGI monitoring following appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
(Co-proposal) Fugitive Emissions: Well Sites with Baseline Emissions ≥3 to <8 tpy Methane.	Monitoring and repair based on semiannual monitoring using OGI.	Semiannual OGI monitoring following appendix K. (Optional semiannual EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
(Co-proposal) Fugitive Emissions: Well Sites with Baseline Emissions ≥8 tpy Methane.	Monitoring and repair based on quarterly monitoring using OGI.	Quarterly OGI monitoring following appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm[3] defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
Fugitive Emissions: Compressor Stations	Monitoring and repair based on quarterly monitoring using OGI.	Quarterly OGI monitoring following appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
Fugitive Emissions: Well Sites and Compressor Stations on Alaska North Slope.	Monitoring and repair based on annual monitoring using OGI.	Annual OGI monitoring following appendix K. (Optional annual EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
Fugitive Emissions: Well Sites and Compressor Stations.	(Optional) Screening, monitoring, and repair based on bimonthly screening using an advanced measurement technology and annual monitoring using OGI.	(Optional) Alternative bimonthly screening with advanced measurement technology with annual OGI monitoring following appendix K.
Storage Vessels: A Single Storage Vessel or Tank Battery with PTE[4] of 6 tpy or More of VOC.	Capture and route to a control device	95 percent reduction of VOC and methane.
Pneumatic Controllers: Natural Gas Driven that Vent to the Atmosphere.	Use of zero-emissions controllers	VOC and methane emission rate of zero.
Pneumatic Controllers: Alaska (at sites where onsite power is not available—continuous bleed natural gas driven).	Installation of low-bleed pneumatic controllers.	Natural gas bleed rate no greater than 6 scfh.[5]
Pneumatic Controllers: Alaska (at sites where onsite power is not available—intermittent natural gas driven).	Monitor and repair through fugitive emissions program.	OGI monitoring and repair of emissions from controller malfunctions.
Well Liquids Unloading	Perform liquids unloading with zero methane or VOC emissions. If this is not feasible for safety or technical reasons, employ best management practices to minimize venting.	Each affected well that unloads liquids employ techniques or technology(ies) that eliminate or minimize venting of emissions during liquids unloading events to the maximum extent.
	[illegible]	Co Proposal Options: *Option One*—Affected facility would be defined as every well that undergoes liquids unloading. —If the method is one that does not result in any venting to the atmosphere, maintain records specifying the technology or technique and record instances where an unloading event results in emissions. —For unloading technologies or techniques that result in venting to the atmosphere, implement BMPs[6] to ensure that venting is minimized. —Maintain BMPs as records, and record instances when they were not followed. *Option Two*—Affected facility would be defined as every well that undergoes liquids unloading using a method that is not designed to eliminate venting. —Wells that utilize non-venting methods would not be affected facilities that are subject to the NSPS OOOOb. Therefore, they would not have requirements other than to maintain records to document that they used non-venting liquids unloading methods. —The requirements for wells that use methods that vent would be the same as described above under Option 1.

TABLE 2—SUMMARY OF PROPOSED BSER AND PROPOSED STANDARDS OF PERFORMANCE FOR GHGS AND VOC—Continued

[NSPS OOOOb]

Affected source	Proposed BSER	Proposed standards of performance for GHGs and VOCs
		Option 1:
Wet Seal Centrifugal Compressors (except for those located at single well sites).	Capture and route emissions from the wet seal fluid degassing system to a control device or to a process.	Reduce emissions by 95 percent.
Reciprocating Compressors (except for those located at single well sites).	Replace the reciprocating compressor rod packing based on annual monitoring (when measured leak rate exceeds 2 scfm [7]) or route emissions to a process.	Replace the reciprocating compressor rod packing when measured leak rate exceeds 2 scfm based on the results of annual monitoring or collect and route emissions from the rod packing to a process through a closed vent system under negative pressure.
Pneumatic Pumps: Natural Gas Processing Plants.	A natural gas emission rate of zero	A natural gas emission rate of zero from diaphragm and piston pneumatic pumps.
Pneumatic Pumps: Production Segment ...	Route diaphragm and piston pneumatic pumps to an existing control device or process.	95 percent control of diaphragm and piston pneumatic pumps if there is an existing control or process on site. 95 percent control not required if (1) routed to an existing control that achieves less than 95 percent or (2) it is technically infeasible to route to the existing control device or process.
Pneumatic Pumps: Transmission and Storage Segment.	Route diaphragm pneumatic pumps to an existing control device or process.	95 percent control of diaphragm pneumatic pumps if there is an existing control or process on site. 95 percent control not required if (1) routed to an existing control that achieves less than 95 percent or (2) it is technically infeasible to route to the existing control device or process.
Well Completions: Subcategory 1 (non-wildcat and non-delineation wells).	Combination of REC [8] and the use of a completion combustion device.	Applies to each well completion operation with hydraulic fracturing. REC in combination with a completion combustion device; venting in lieu of combustion where combustion would present safety hazards. Initial flowback stage: Route to a storage vessel or completion vessel (frac tank, lined pit, or other vessel) and separator. Separation flowback stage: Route all salable gas from the separator to a flow line or collection system, re-inject the gas into the well or another well, use the gas as an onsite fuel source or use for another useful purpose that a purchased fuel or raw material would serve. If technically infeasible to route recovered gas as specified above, recovered gas must be combusted. All liquids must be routed to a storage vessel or well completion vessel, collection system, or be re-injected into the well or another well. The operator is required to have (and use) a separator onsite during the entire flowback period.
Well Completions: Subcategory 2 (exploratory and delineation wells and low-pressure wells).	Use of a completion combustion device ..	Applies to each well completion operation with hydraulic fracturing. The operator is not required to have a separator onsite. Either: (1) Route all flowback to a completion combustion device with a continuous pilot flame; or (2) Route all flowback into one or more well completion vessels and commence operation of a separator unless it is technically infeasible for a separator to function. Any gas present in the flowback before the separator can function is not subject to control under this section. Capture and direct recovered gas to a completion combustion device with a continuous pilot flame. For both options (1) and (2), combustion is not required in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost, or waterways.

TABLE 2—SUMMARY OF PROPOSED BSER AND PROPOSED STANDARDS OF PERFORMANCE FOR GHGS AND VOC—Continued

[NSPS OOOOb]

Affected source	Proposed BSER	Proposed standards of performance for GHGs and VOCs
Equipment Leaks at Natural Gas Processing Plants.	LDAR[9] with bimonthly OGI	LDAR with OGI following procedures in appendix K.
Oil Wells with Associated Gas	Route associated gas to a sales line. If access to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions.	Route associated gas to a sales line. If access to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions.
Sweetening Units	Achieve SO_2 emission reduction efficiency.	Achieve required minimum SO_2 emission reduction efficiency.

TABLE 3—SUMMARY OF PROPOSED BSER AND PROPOSED PRESUMPTIVE STANDARDS FOR GHGS FROM DESIGNATED FACILITIES

[EG OOOOc]

Designated facility	Proposed BSER	Proposed presumptive standards for GHGs
Fugitive Emissions: Well Sites >0 to <3 tpy Methane.	Demonstrate actual site emissions are reflected in calculation.	Perform survey to verify that actual site emissions are reflected in calculation.
Fugitive Emissions: Well Sites ≥3 tpy Methane.	Monitoring and repair based on quarterly monitoring using OGI.	Quarterly OGI monitoring following appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
(Co-proposal) Fugitive Emissions: Well Sites ≥3 to <8 tpy Methane.	Monitoring and repair based on semiannual monitoring using OGI.	Semiannual OGI monitoring following appendix K. (Optional semiannual EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
(Co-proposal) Fugitive Emissions: Well Sites ≥8 tpy Methane.	Monitoring and repair based on quarterly monitoring using OGI.	Quarterly OGI monitoring following appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
Fugitive Emissions: Compressor Stations	Monitoring and repair based on quarterly monitoring using OGI.	Quarterly OGI monitoring following appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
Fugitive Emissions: Well Sites and Compressor Stations on Alaska North Slope.	Monitoring and repair based on annual monitoring using OGI.	Annual OGI monitoring following appendix K. (Optional annual EPA Method 21 monitoring with 500 ppm defined as a leak). First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.
Fugitive Emissions: Well Sites and Compressor Stations.	(Optional) Screening, monitoring, and repair based on bimonthly screening using an advanced measurement technology and annual monitoring using OGI.	(Optional) Alternative bimonthly screening with advanced measurement technology with annual OGI monitoring following appendix K.

TABLE 3—SUMMARY OF PROPOSED BSER AND PROPOSED PRESUMPTIVE STANDARDS FOR GHGS FROM DESIGNATED FACILITIES

[EG OOOOc]

Designated facility	Proposed BSER	Proposed presumptive standards for GHGs
	OGI.	
Storage Vessels: Tank Battery with PTE of 20 tpy or More of Methane.	Capture and route to a control device	95 percent reduction of methane.
Pneumatic Controllers: Natural Gas Driven that Vent to the Atmosphere.	Use of zero-emissions controllers	VOC and methane emission rate of zero.
Pneumatic Controllers: Alaska (at sites where onsite power is not available—continuous bleed natural gas driven).	Installation of low-bleed pneumatic controllers.	Natural gas bleed rate no greater than 6 scfh.
Pneumatic Controllers: Alaska (at sites where onsite power is not available—intermittent natural gas driven).	Monitor and repair through fugitive emissions program.	OGI monitoring and repair of emissions from controller malfunctions.
Wet Seal Centrifugal Compressors (except for those located at single well sites).	Capture and route emissions from the wet seal fluid degassing system to a control device or to a process.	Reduce emissions by 95 percent.
Reciprocating Compressors (except for those located at single well sites).	Replace the reciprocating compressor rod packing based on annual monitoring (when measured leak rate exceeds 2 scfm) or route emissions to a process.	Replace the reciprocating compressor rod packing when measured leak rate exceeds 2 scfm based on the results of annual monitoring, or collect and route emissions from the rod packing to a process through a closed vent system under negative pressure.
Pneumatic Pumps: Natural Gas Processing Plants.	A natural gas emission rate of zero	Zero natural gas emissions from diaphragm and piston pneumatic pumps.
Pneumatic Pumps: Locations Other Than Natural Gas Processing Plants.	Route diaphragm pumps to an existing control device or process.	95 percent control of diaphragm pneumatic pumps if there is an existing control or process on site. 95 percent control not required if (1) routed to an existing control that achieves less than 95 percent or (2) it is technically infeasible to route to the existing control device or process.
Equipment Leaks at Natural Gas Processing Plants.	LDAR with bimonthly OGI	LDAR with OGI following procedures in appendix K.
Oil Wells with Associated Gas	Route associated gas to a sales line. If access to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions.	Route associated gas to a sales line. If access to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions.

Subsection Relevant Facts

X. Summary of Proposed Action for NSPS OOOOa

The EPA is proposing to revise 40 CFR part 60, subpart OOOOa, to apply certain amendments made in the 2020 Technical Rule to the 2016 NSPS OOOOa for methane from the production and processing segments and/or the 2016 NSPS OOOOa for methane and VOC from the transmission and storage segment, as specified in this section. the EPA is not reopening the methane standards as finalized in the 2016 NSPS OOOOa, except as to the specific issues discussed below, nor is the EPA reopening any other portions of the 2016 Rule. The EPA is also not reopening any determinations made in the 2020 Technical Rule, except as to the specific issues discussed below. Finally, the reopening of determinations made with respect to the VOC standards in the 2020 Technical Rule does not indicate any intent to also reopen the methane standards for the same affected facilities.

A. Amendments to Fugitive Emissions Monitoring Frequency

The EPA is proposing to repeal its amendments in the 2020 Technical Rule that (1) exempted low production well sites from monitoring fugitive emissions and (2) changed from quarterly to semiannual monitoring of VOC emissions at gathering and boosting compressor stations.

B. Technical and Implementation Amendments
2. PNEUMATIC PUMPS

Greenfield Sites - The 2020 Technical Rule therefore expanded the technical infeasibility provision to apply to pneumatic pumps at all well sites, including new developments (greenfield sites), concluding that the extension was appropriate because the EPA identified circumstances where it may not be technically feasible to control pneumatic pumps at a greenfield site. The 2020 Technical Rule removed the reference to greenfield site in 40 CFR 60.5393a(b) and the associated definition of greenfield site at 40 CFR 60.5430a.

Control Devices for pumps - In the final rule preamble for the 2016 NSPS OOOOa, the EPA stated we did not intend to require the installation of a control device at a well site for the sole purpose of controlling emissions from a pneumatic pump, but rather only required control of pneumatic pumps to the extent a control device or process would already be available on site. It is not the EPA's intent to require a greenfield site to install a control device specifically for controlling emissions from a pneumatic pump.

Boilers and Heaters as Control Devices - Based on the EPA's understanding that boilers and process heaters located at well sites are designed and operated as process equipment (meaning they are not inherently designed for the control of emissions), the EPA also does not intend to require their continuous operation solely to control emissions from pneumatic pumps either. Therefore, the EPA is proposing to align the methane standards for pneumatic pumps with the 2020 Technical Rule to specify that boilers and process heaters are not considered control devices for the purposes of controlling pneumatic pump emissions.

Certification Requirements - EPA is proposing to align the certification requirements for the determination that it is technically infeasible to route emissions from a pneumatic pump to a control device or process. The 2016 NSPS OOOOa required certification of technical infeasibility by a qualified third-party Professional Engineer (PE); however, the 2020 Technical Rule allows this certification by either a PE or an in-house engineer, because in-house engineers may be more knowledgeable about site design and control than a third-party PE. The EPA continues to believe that certification by an in-house engineer is appropriate for this purpose. We are, therefore, proposing to align the methane standards in the 2016 NSPS OOOOa with the 2020 Technical Rule to allow certification of technical infeasibility by either a PE or an in-house engineer with expertise on the design and operation of the pneumatic pump. We are soliciting comment on this proposed alignment.

4. FUGITIVE EMISSIONS AT WELL SITES AND COMPRESSOR STATIONS

A. WELL SITES – DEFINITION MADE CLEAR

The EPA is proposing to exclude from fugitive emissions monitoring a well site that is or later becomes a "wellhead only well site," which the 2020 Technical Rule defines as "a well site that contains one or more wellheads and no major production and processing equipment." As explained in that rulemaking, "[s]ome well sites, especially in areas with very dry gas or where centralized gathering facilities are used, consist only of one or more wellheads, or `Christmas trees,' and have no ancillary equipment such as storage vessels, closed vent systems, control devices, compressors, separators and pneumatic controllers. Because the magnitude of fugitive emissions depends on how many of each type of component (e.g., valves, connectors, and pumps) are present, fugitive emissions from these well sites are extremely low." 80 FR 56611. The 2020 Technical Rule defined "major production and processing equipment" as including reciprocating or centrifugal compressors, glycol dehydrators, heater/treaters, separators, and storage vessels collecting crude oil, condensate, intermediate hydrocarbon liquids, or produced water. The EPA continues to support an exemption for well sites that do not have this major production and processing equipment. The 2020 Technical Rule allows certain small ancillary equipment, such as chemical injection pumps, pneumatic controllers used to control well emergency shutdown valves, and pumpjacks, that are associated with, or attached to, the wellhead and "Christmas tree" to remain at a "wellhead only well site" without being subject to the fugitive emissions monitoring requirements because they have very few fugitive emissions components that would leak, and therefore have limited potential for fugitive emissions. The emission reduction benefits of continuing monitoring at that point would be relatively low, and thus would not be cost-effective.

For the reason stated above, the EPA is proposing to amend the 2016 NSPS OOOOa to allow monitoring of methane fugitive emissions to stop when a wellsite contains only wellhead(s) and no major production and processing equipment, as provided in the 2020 Technical Rule.

B. COMPRESSOR STATIONS

As discussed above, the 2016 NSPS OOOOa required quarterly monitoring of compressor stations for both VOC and methane emissions, and it also permitted waiver from one quarterly monitoring event when the average temperature is below 0 °F for two consecutive months because it is technically infeasible for the OGI camera (and EPA Method 21 instruments) to operate below this temperature. After the 2020 Policy Rule rescinded the methane standards, the 2020 Technical Rule reduced the monitoring requirements for the VOC standards to require only semiannual monitoring and, in doing so, removed the waiver. Upon enactment of the CRA resolution, compressor stations again became subject to quarterly monitoring pursuant to the reinstated 2016 NSPS OOOOa methane standards, and the waiver as it applied to the methane standards was also reinstated. Consistent with the proposal to align the monitoring requirements for VOCs with the monitoring requirements for methane, the EPA is also proposing to reinstate the waiver for the VOC standards as specified in the 2016 NSPS OOOOa.

C. WELL SITES AND COMPRESSOR STATIONS ON THE ALASKA NORTH SLOPE

The EPA is proposing to amend the 2016 NSPS OOOOa to require that new, reconstructed, and modified compressor stations located on the Alaska North Slope that startup (initially, or after reconstruction or modification) between September and March to conduct initial monitoring of methane emissions within 6 months of startup, or by June 30, whichever is later. The EPA made a similar amendment to the initial monitoring of methane and VOC emissions at well sites located on the Alaska North Slope in the March 12, 2018 amendments to the 2016 NSPS OOOOa ("2018 NSPS OOOOa Rule"). As explained in that action, such separate requirements were warranted due to the area's extreme cold temperatures, which for approximately half of the year are below the temperatures at which the monitoring instruments are designed to operate. The 2020 Technical Rule made this amendment for VOC emissions from gathering and boosting compressor stations located in the Alaska North Slope for this same reason.

The EPA is also proposing to amend the 2016 NSPS OOOOa to require annual monitoring of methane and VOC emissions at all compressor stations located on the Alaska North Slope, with subsequent annual monitoring at least 9 months apart but no more than 13 months apart. In the 2018 NSPS OOOOa Rule, the EPA similarly amended the monitoring frequency for well sites located on the Alaska North Slope to annual monitoring to accommodate the extreme cold temperature. 83 FR 10628 (March 12, 2018). For the same reason, in the 2020 Technical Rule, the EPA amended the 2016 NSPS OOOOa to

require annual VOC monitoring at gathering and boosting compressor stations located on the Alaska North Slope because extreme cold temperatures make it technically infeasible to conduct OGI monitoring for over half of a year. Because the same difficulties would arise with respect to monitoring for fugitive methane emissions from gathering and boosting compressor stations or to monitoring of methane and VOC emissions from compressor stations in the transmission and storage segment, the EPA is proposing to amend the 2016 NSPS OOOOa to require that all compressor stations located on the Alaska North Slope conduct annual monitoring of both methane and VOC emissions.

Further, the EPA is proposing to extend the deadline for conducting initial monitoring of both VOC and methane emissions from 60 days to 90 days for all well sites and compressor stations located on the Alaska North Slope that startup or are modified between April and August. In the 2020 Technical Rule, the EPA made this amendment for initial VOC monitoring to allow the well site or gathering and boosting compressor station to reach normal operating conditions. 85 FR 57406. For the same reason, we are proposing to further amend the 2016 NSPS OOOOa to apply this same 90-day initial monitoring requirement to initial monitoring of fugitive methane and VOC emissions from all well sites and compressor stations located on the Alaska North Slope that startup or are modified between April and August.

E. INITIAL MONITORING FOR WELL SITES AND COMPRESSOR STATIONS

The EPA is proposing to further amend the 2016 NSPS OOOOa to extend the deadline for conducting initial monitoring from 60 to 90 days for monitoring both VOC and methane fugitive emissions at all well sites and compressor stations (except those on the Alaska North Slope

F. REPAIR REQUIREMENTS

The EPA is proposing to require a first attempt at repair within 30 days of identifying fugitive emissions and final repair, including the resurvey to verify repair, within 30 days of the first attempt at repair.

In the 2020 Technical Rule, the EPA clarified that repairs should be verified as successful prior to the repair deadline and added definitions for the terms "first attempt at repair" and "repaired." In addition, the EPA is proposing that delayed repairs be completed during the "next scheduled compressor station shutdown for maintenance, scheduled well shutdown, scheduled well shut-in, after a scheduled vent blowdown, or within 2 years, whichever is earliest." The proposed amendment would clarify that completion of delayed repairs is required during scheduled shutdown for maintenance, and not just any shutdown.

In 2018 NSPS OOOOa Rule the EPA amended the 2016 NSPS OOOOa to specify that, where the repair of a fugitive emissions component is "technically infeasible, would require a vent blowdown, a compressor station shutdown, a well shutdown or well shut-in, or would be unsafe to repair during operation of the unit, the repair must be completed during the next scheduled compressor station shutdown, well shutdown, well shut-in, after a planned vent blowdown, or within 2 years, whichever is earlier."

XI. Summary of Proposed NSPS OOOOb and EG OOOOc

This section presents a summary of the specific NSPS standards and EG presumptive standards the EPA is proposing for various types of equipment and emission points. As stated in section I, the EPA intends to provide draft regulatory text for the proposed NSPS OOOOb and EG OOOOc in a supplemental proposal.

A. Fugitive Emissions from Well Sites and Compressor Stations

- Well sites with total site-level baseline methane emissions less than 3 tpy: Demonstration, based on a site-specific survey, that actual emissions are reflected in the baseline methane emissions calculation,
- Well sites with total site-level baseline methane emissions of 3 tpy or greater: Quarterly OGI or EPA Method 21 monitoring,
- (Co-proposal) Well sites with total site-level baseline methane emissions of 3 tpy or greater and less than 8 tpy: Semiannual OGI or EPA Method 21 monitoring,
- (Co-proposal) Well sites with total site-level baseline methane emissions of 8 tpy or greater: Quarterly OGI or EPA Method 21 monitoring,

- Compressor stations: Quarterly OGI or EPA Method 21 monitoring,
- Well sites and compressor stations located on the Alaska North Slope: Annual monitoring, with separate initial monitoring requirements, and
- Alternative screening approach for all well sites and compressor stations: Bimonthly screening surveys using advanced measurement technology and annual OGI or EPA Method 21 monitoring at each individual well site or compressor station.

1. DEFINITION OF FUGITIVE EMISSIONS COMPONENT

"Fugitive emissions component" is proposed to be any component that has the potential to emit fugitive emissions of methane and VOC at a well site or compressor station, including valves, connectors, PRDs, open-ended lines, flanges, all covers and closed vent systems, all thief hatches or other openings on a controlled storage vessel, compressors, instruments, meters, natural gas-driven pneumatic controllers, or natural gas-driven pumps. However, natural gas discharged from natural gas-driven pneumatic controllers or natural gas-driven pumps are not considered fugitive emissions if the device is operating properly and in accordance with manufacturers specifications. Control devices, including flares, with emissions resulting from the device operating in a manner that is not in full compliance with any Federal rule, State rule, or permit, are also considered fugitive emissions components. This proposed definition includes the same components that were included in the 2016 NSPS OOOOa and adds sources of large emissions, such as malfunctioning controllers or control devices.

The inclusion of specific component types in this proposed definition would allow the use of OGI, EPA Method 21, or an alternative screening technology to identify emissions that would either be repaired (i.e., leaks) or have a root cause analysis with corrective action (e.g., malfunctioning control device, unintentional gas carry through, venting from covers and openings on a controlled storage vessel, or malfunctioning natural gas-driven pneumatic controllers). Further, where a CVS is used to route emissions from an affected facility (i.e., centrifugal or reciprocating compressor, pneumatic pump, or storage vessel), the owner or operator would demonstrate there are no detectable emissions from the covers and CVS through the OGI (or EPA Method 21) monitoring conducted during the fugitive emissions survey. Where emissions are detected, corrective actions to complete all necessary repairs as soon as practicable would be required, and the emissions would be considered a potential violation of the no detectable emissions standard. In the case of a malfunction or operational upset of a control device or the equipment itself, where emissions are not expected to occur if the equipment is operating in compliance with the standards of the rule, this proposal would require the owner or operator to conduct a root cause analysis to determine why the emissions are present, take corrective action to complete all necessary repairs as soon as practicable and prevent reoccurrence of emissions, and report the malfunction or operational upset as a potential violation of the underlying standards for the source of the emissions.

2. FUGITIVE EMISSIONS FROM WELL SITES

A. NSPS OOOOB

For new, modified, or reconstructed sources, the EPA is proposing a fugitive emissions monitoring and repair program that includes monitoring for fugitive emissions with OGI in accordance with the proposed 40 CFR part 60, appendix K ("appendix K"), which is included in this action and outlines the proposed procedures that must be followed to identify emissions using OGI.[191] It is also proposed that EPA Method 21 may be used as an alternative to OGI monitoring. Further, the EPA is proposing that monitoring must begin within 90 days of startup of production (or startup of production after modification).

OGI Appendix K Monitoring is not explained within this document, as a training session will be taking place on 12/14/21

Table 13—Proposed Well Site Monitoring Frequencies Based on Site-Level Baseline Methane Emissions

Site-level baseline methane emissions threshold	Proposed OGI monitoring frequency	Co-proposed OGI monitoring frequency
>0 and <3 tpy	No routine monitoring required	No routine monitoring required.
≥3 and <8 tpy	Quarterly	Semiannual.
≥8 tpy	Quarterly	Quarterly.

B. EG OOOOC

For existing well sites (for EG OOOOc), presumptive standards follow the same fugitive monitoring and repair program as for new sources.

3. FUGITIVE EMISSIONS FROM COMPRESSOR STATIONS

The current NSPS for reducing fugitive emissions from the collection of fugitive emissions components located at a compressor station is a fugitive emissions monitoring and repair program requiring quarterly OGI monitoring. The EPA is proposing quarterly OGI monitoring requirement for both methane and VOC as it continues to reflect the BSER for reducing both emissions from fugitive components at new, modified, and reconstructed compressor stations. Likewise, the EPA is also proposing quarterly monitoring as a presumptive GHG standard (in the form of limitation on methane emissions) for the collection of fugitive emissions components located at existing compressor stations. The affected compressor stations include gathering and boosting, transmission, and storage compressor stations.

A. NSPS OOOOB

The EPA is proposing that the quarterly monitoring using OGI be conducted in accordance with the proposed appendix K described above in section XI.A.2, which outlines procedures that must be followed to identify leaks using OGI. The EPA plans to retain the current requirements that monitoring must begin within 90 days of startup of the station (or startup after modification), with subsequent quarterly monitoring occurring at least 60 days apart. Also, quarterly monitoring may be waived when temperatures are below 0 °F for two of three consecutive calendar months of a quarterly monitoring period. The EPA is not proposing any change to the following repair-related requirements: Specifically, a first attempt at repair must be made within 30 days of detecting the fugitive emissions, with final repair, including resurvey to verify repair, completed within 30 days after the first attempt. In addition, owners and operators must develop a fugitive emissions monitoring plan that covers all the applicable requirements for the collection of fugitive emissions components located at a compressor station. In conjunction with the proposed requirement that monitoring be conducted in accordance with the proposed appendix K, we are proposing to require that the monitoring plan also include elements specified in the proposed appendix K when using OGI.

C. Pneumatic Controllers

1. EG OOOOB

For existing sources, the EPA is proposing a presumptive standard that includes the same fugitive emissions monitoring a the EPA is proposing pneumatic controller standards for NSPS OOOOb as follows. First, in addition to each single natural gas-driven continuous bleed pneumatic controller being an affected facility, the EPA proposes to define each natural gas-driven intermittent vent pneumatic controller as an affected facility. The EPA believes these pneumatic controllers should be covered by NSPS OOOOb because natural gas-driven intermittent devices represent a large majority of the overall population of pneumatic controllers and are responsible for the majority of emissions from these sources. The EPA is not proposing to define an intermittent vent natural gas-driven pneumatic controller as a pneumatic controller that is not

designed to have a continuous bleed rate but is instead designed to only release natural gas to the atmosphere as part of the actuation cycle. This affected facility definition would apply at all sites, including natural gas processing plants.

Second, a requirement that all controllers (continuous bleed and intermittent vent) must have a VOC and methane emission rate of zero. The proposed rule does not specify how this emission rate of zero must be achieved, but a variety of viable options are discussed in Section XII.C. including the use of pneumatic controllers that are not driven by natural gas such as air-driven pneumatic controllers and electric controllers, as well as natural gas driven controllers that are designed so that there are no emissions, such as self-contained pneumatic controllers. As noted above, the EPA is proposing that the definition of an affected facility would be each pneumatic controller that is driven by natural gas and that emits to the atmosphere. As such, pneumatic controllers that are not driven by natural gas would not be affected facilities and thus would not be subject to the pneumatic controller requirements of NSPS OOOOb. Similarly, controllers that are driven by natural gas but that do not emit to the atmosphere would also not be affected facilities.

2. EG OOOOC

The EPA is proposing to define designated facilities (existing sources) analogous to the affected facility definitions described above for pneumatic controllers under the NSPS. For the reasons discussed in section XII.C.2, the BSER analysis for existing sources supports proposing presumptive standards for reducing methane emissions from existing pneumatic controllers that are the same as those the EPA is proposing for new, modified, or reconstructed sources (for NSPS OOOOb).

E. Reciprocating Compressors

1. NSPS OOOOB

The current NSPS in subpart OOOOa for reducing VOC and methane emissions from reciprocating compressors is to replace the rod packing on or before 26,000 hours of operation or 36 calendar months, or to route emissions from the rod packing to a process through a closed vent system under negative pressure. The affected facility is each reciprocating compressor, with the exception of reciprocating compressors located at well sites. Based on the analysis in section XII.E.1, the proposed BSER for reducing GHGs and VOC from new reciprocating compressors is replacement of the rod packing based on an annual monitoring threshold. Under this proposal for the NSPS, the EPA would continue to retain, as an alternative, the option of routing rod packing emissions to a process via a closed vent system under negative pressure. In this proposed updated standard, the owner or operator of a reciprocating compressor affected facility would be required to monitor the rod packing emissions annually using a flow measurement. When the measured leak rate exceeds 2 scfm (in pressurized mode), replacement of the rod packing would be required.

As mentioned above, reciprocating compressors that are located at well sites are not affected facilities under the 2016 NSPS OOOOa. The EPA previously excluded them because the cost of control to be unreasonable. 81 FR 35878 (June 3, 2016). The current analysis, as summarized in section XII.E.1, continues to support this exclusion for a subset of well sites so this proposal for NSPS OOOOb includes that same exclusion for well sites that are not centralized production facilities. See section XI.L for additional details on centralized production facilities. As described in that section, the EPA is proposing to apply the proposed standards to reciprocating compressors located at centralized production facilities.

2. EG OOOOC

Based on the analysis in section XII.E.2, the EPA is proposing EG that include a presumptive GHG standard (in the form of limitation on methane emissions) for existing reciprocating compressors that is the same as the proposed NSPS, including applying these presumptive standards to reciprocating compressors located at existing centralized tank batteries.

G. Pneumatic Pumps

1. EG OOOOB

For NSPS OOOOb, the EPA is proposing to expand the applicability of the standard currently in NSPS OOOOa in two ways. The first is by including all natural gas driven diaphragm pumps as affected facilities in the transmission and storage segment in addition to the production and natural gas processing segments. The second is that they are

expanding the affected facility definition to include natural gas driven piston pumps in addition to diaphragm pumps. The proposed definition of an affected facility would continue to exclude lean glycol circulation pumps that rely on energy exchange with the rich glycol from the contractor.

2. EG OOOOC

The EPA is proposing EG that include presumptive methane standards that are the same as described above for the NSPS OOOOb for existing natural gas driven diaphragm pneumatic pumps located at well sites and all other sites in the production segment (except processing plants) and transmission and storage segment where an existing control device exists. However, unlike the proposed methane standards in NSPS OOOOb for natural gas driven piston pneumatic pumps at sites in the production segment, the proposed presumptive standards under EG OOOOc exclude piston pumps from the 95 percent control requirements.