UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Memorandum

To: Docket ID No. EPA-HQ-OAR-2021-0317

Subject: Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review – Supplemental Proposed Rule Summary of Comment Solicitations

Date: October, 2022

1.0 Introduction

The Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review supplemental proposal preamble (NSPS OOOOb and EG OOOOc Supplemental Proposal Preamble) includes comment and information solicitations/requests on several topics and issues. This memorandum presents a compilation of these solicitations/requests by emission source/topic and preamble section as a guide to assist the public in providing comments and is not intended to limit the issues subject to public comment. It is recommended that the public refer to the supplemental proposal **Federal Register** notice for more information and context regarding the full scope of issues on which comment is being solicited.

2.0 Comment Solicitations

The following table includes a compilation of the comment and information solicitations/requests included in the supplemental proposal preamble. In addition to the attached table, the EPA is including an Excel file of this table as an attachment to this memorandum in the docket that commenters on the proposal can use to sort by preamble section, topic, and issue. The context for the solicitations/requests presented in the table can be found in the proposal **Federal Register** preamble for this action. The proposal **Federal Register** preamble outline is included as an **Attachment** to this memorandum.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Advanced Methane Detection Technologies	IV.B	LDAR Effectiveness Models	The EPA solicits comment on the use of LDAR effectiveness models in the development of the requirements for the alternative screening approach, specifically on the appropriateness of the inputs and assumptions used in the EPA's FEAST modeling simulations.
Advanced Methane Detection Technologies	IV.B	Alternative Periodic Screening Approach - Survey Matrices	These survey matrices will provide owners and operators who choose to implement the alternative periodic screening approach a wider selection of methane detection technologies from which to choose. The matrices also provide clear goals for vendors interested in the development of future technologies for methane detection. The EPA solicits comments on the survey matrices developed for the alternative periodic screening approach. Specifically, the EPA is interested in comments regarding the applicability of this matrix to both currently available technologies and those currently in development. Further, where specific technologies may not easily work within the context of the proposed matrix, we are soliciting detailed information on how those specific technologies work, including empirical data that would allow for additional evaluation of parameters in the proposed matrix; how emissions reduction equivalency can be demonstrated for those technologies compared with the standard OGI work practice; and changes that would be needed to the proposed matrix and the basis for those changes. Finally, we are soliciting feedback from owners and operators on ways to improve and further incentivize use of the proposed matrix approach to ensure they are comfortable utilizing any approved alternative technologies and test methods.
Advanced Methane Detection Technologies	IV.B	Continuous Monitoring Systems - Equivalency with Other Fugitive Emissions Monitoring/Cover-CVS Requirements	The EPA also solicits comment on whether a different type of approach should be used for these other types of continuous monitoring systems, and if so, what that approach would look like and how equivalency could be demonstrated between the approach and the proposed fugitive emissions monitoring and repair program and proposed covers and CVS requirements in NSPS OOOOb and EG OOOOc.
Advanced Methane Detection Technologies	IV.B	Continuous Monitoring Systems - Operational Downtime	The EPA is proposing that the operational downtime of the continuous monitoring system, or the time that any monitor fails to collect or transmit quality assured data, must be less than or equal to 10 percent on a 12-month rolling average, where the 12-month average is recalculated each month. We are soliciting comment on this approach to addressing downtime and other ways to address system downtime and the consequences of that downtime.
Advanced Methane Detection Technologies	IV.B	Continuous Monitoring Systems - Timing to Install and Begin Monitoring	[T]he EPA is proposing the continuous monitoring system must begin monitoring no later than the date of the next scheduled OGI monitoring survey for any affected facility that was previously complying with the proposed fugitive emissions monitoring and repair program and proposed covers and CVS requirements in NSPS OOOOb and EG OOOOc. The EPA solicits comment on the proposed timing to install and begin conducting monitoring with the continuous monitoring system, including information to support different timeframes.
Advanced Methane Detection Technologies	IV.B.1	Corrective Actions - Deadlines	The EPA understands that the length of time necessary to complete corrective actions will vary based on the specific action taken. The EPA is soliciting comment on an appropriate deadline by which all corrective actions should be completed that would account for variability in complexity for such actions.
Advanced Methane Detection Technologies	IV.B.2	Fugitive Emissions Monitoring - Proposed Short-Term and Long-Term Action Levels	This long-term action level would be based on a rolling 90-day average, where the 90-day average would be recalculated each day. The EPA is also proposing a short-term action-level of 15 kg/hr. for sites consisting of only wellheads and 21 kg/hr. for other well sites and compressor stations. These action levels are based on the same magnitude of emissions as the long-term action level; however, the rates are defined over the period of seven days. The short-term action level would be based on a rolling 7-day average, where the 7-day average would be recalculated each day. The EPA solicits comment on the proposed short-term and long-term action levels.
Advanced Methane Detection Technologies	IV.B.2	Fugitive Emissions Monitoring - Short-Term and Long-Term Action Levels	The EPA is also aware of industry led efforts to minimize methane emissions through the entirety of the value chain using the percentage of intensity or production as a metric. The EPA is soliciting comment on the potential use of intensity or production in the development of action levels, including appropriate thresholds for setting such action levels on both a short-term and long-term basis.

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Advanced Methane Detection Technologies	IV.B.2	Continuous Monitoring Technology - Site-Level Methane Emissions/Data	The EPA is aware of other continuous monitoring systems using technologies that are not designed to quantify a site-level methane emissions rate (*e.g.* , camera based continuous systems). While the EPA believes these systems could be useful in a methane mitigation program, they are not suitable for the proposed alternative continuous monitoring approach because they are not capable of quantifying site-level methane emissions, which is the basis for the equivalency demonstration of the proposed alternative continuous monitoring approach. That said, the EPA solicits comment on how these types of systems could fit within the alternative continuous monitoring approach, what action levels should be applied to a non-emission rate based continuous monitoring system, and data to support those action levels in order to conduct an equivalency demonstration.
Advanced Methane Detection Technologies	IV.B.2	Root Cause Analysis and Corrective Action-Conduct and Action Plan Submittal Timeframes	The EPA is proposing that owners and operators must initiate a root cause analysis within 5 calendar days of an exceedance of either the short-term or long-term action level. Additionally, the EPA is proposing that the initial corrective action identified must be completed within five calendar days of an exceedance of the short-term action level and within 30 calendar days of an exceedance of the long-term action level. If, upon completion of the initial corrective actions, the continuous monitor readings remain above an action level, or if all identified corrective action measures require more than 30 days to complete, the owner or operator would be required to develop a corrective action plan and submit it to the Administrator within 60 calendar days of the initial action level exceedance. The EPA is soliciting comment on the proposed requirements for the root cause analysis and corrective action, the timeframes for conducting these activities, and the requirement for corrective action plan submittals.
Advanced Methane Detection Technologies	IV.B.2	Fugitive Emissions Monitoring - Timeframes	The EPA is proposing that the initial periodic screening survey must be conducted no later than the date of the next required OGI fugitive emissions survey for any affected facility that was previously complying with the proposed fugitive emissions monitoring and repair program and proposed covers and CVS requirements in NSPS OOOOb and EG OOOOc. The EPA solicits comment on the proposed timing to perform the initial periodic screening survey, including information to support different timeframes.
Advanced Methane Detection Technologies	IV.B.2	Proposed Alternative Continuous Monitoring Approach	The EPA is soliciting comment on th[e] proposed alternative continuous monitoring approach, especially the use of site-level methane emissions as a surrogate for VOC emissions, the practicality of implementing the proposed framework, and any additional data on how continuous monitoring technologies have been deployed at well sites, centralized production facilities, and compressor stations.
Advanced Methane Detection Technologies	IV.B.3	40 CFR 60.8(b)(3) Provision - Use for Approval of Test Method for an Alternative Technology	Based on the comments received, the EPA is proposing to require these systems to be approved by the Administrator under the alternative test method provisions in 40 CFR 60.8(b)(3) instead of owners and operators seeking approval of these systems through site-specific monitoring plans. [...] The EPA is soliciting comment on the use of this provision at 40 CFR 60.8(b)(3) for the approval of the test method for an alternative technology for measurements within the proposed alternative periodic screening approach and the proposed alternative continuous monitoring approach.
Advanced Methane Detection Technologies	IV.B.3	Technology Pre-Qualifications - Characterization	The EPA is proposing the following pre-qualifications for those requesting approval of their technology: (1) requestors are limited to any individual or organization located in or that has representation in the U.S.; (2) requestor must have direct knowledge of the design, operation, and characteristics of the underlying technology; (3) the underlying technology must have been applied to methane measurements in the oil and gas production, processing, and/or transmission and storage sectors either domestically or internationally; (4) the technology must be a commercial product, meaning it has been sold, leased, or licensed, or offered for sale, lease, or license, to the general public. While the EPA has based these pre-qualifications on comments received from vendors or advanced methane detection technologies, the EPA solicits comments on how we have characterized the pre-qualifications in this proposal and whether any additional pre-qualifications may be appropriate.
Advanced Methane Detection Technologies	IV.B.3	Alternative Test Methods- Request Review and Approval Timeline	The EPA is proposing a defined timeframe for review and determination of alternative test method requests by the Agency. The EPA is proposing to issue either an approval or disapproval in writing to the requestor within 270 days of receipt of the request, with a number of milestones for acknowledgement of receipt and initial reviews. [...] The EPA solicits comments on the proposed timeframe to review and approve alternative test methods and whether alternative timelines should be considered.

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Advanced Methane Detection Technologies	IV.B.3	Application of an Alternative Test Method - Required Information	In an effort to streamline the approval of these requests by ensuring adequate information is received in the request to allow a full evaluation of the alternative technology, the EPA is proposing that any application for an alternative test method contain the following information at a minimum: […] The EPA solicits comment on the proposed information required to be submitted with the application of an alternative test method and whether the EPA should consider requiring any additional information.
Associated Gas from Oil Wells	IV.F.2	Hierarchy of the Standard and Control Options - Routine Flaring of Associated Gas	The EPA recognizes that several states have adopted standards to further reduce routine flaring of associated gas, including Colorado and New Mexico. As noted above, several commenters also urged the EPA to take additional steps to eliminate routine flaring of associated gas, except in very limited cases such as emergencies or for safety reasons. Therefore, the EPA is taking comment on steps the Agency should consider taking to disallow the indefinite continuation of routine flaring. First, the EPA is taking comment on whether the ongoing annual requirement to report whether circumstances had changed regarding the need to flare should result in a need to perform a more thorough analysis and engineering certification comparable to the initial certification required once an owner or operator becomes subject to the rule. For example, it may be appropriate to require an owner or operator to provide an additional engineering certification that flaring is the only option where a new gathering pipeline is installed within a certain distance of an oil well. Second, the EPA is taking comment on whether it would be appropriate to require more rigorous consideration of alternatives to flaring after a set threshold is reached (e.g., after a set time of flaring (such as 2 years) or after a set volume of gas has been flared). Third, the EPA requests comment on whether there are any provisions in existing state regulations beyond what is already included in this supplemental proposal, or other measures (such as minimum capture requirements or volumetric limits on flaring), that the EPA should consider in its BSER analysis. Finally, the EPA is also soliciting comment on whether there are specific emerging technologies that should be required to be addressed in this demonstration and listed in the rule.
CAA section 111(a) - New Source Applicability/Across Sources	III.B	New Source Definition Based on Publication Date of Supplemental Proposal	The EPA solicits comments on whether CAA section 111(a) provides the EPA discretion to define "new sources" based on the publication date of the supplemental proposal and, if so, whether there are any unique circumstances here that would warrant exercising of such discretion in this rulemaking by the EPA.
Centrifugal Compressors	IV.G.1	Vapor Recovery Unit (VRU) - 95 Percent Control Efficiency Assumption/Prevalence	The EPA has historically assumed that the emissions reduced by routing to a process are 95 percent or greater. [...] The EPA solicits comment on its assumption that the emissions reduced by requiring the capture of gas and routing to a process is 95 percent or greater. The EPA also is soliciting comment on the prevalence of owners and operators complying with NSPS OOOO and NSPS OOOOa or other rules by routing emissions from the wet seal fluid degassing system to a process and the need for a VRU in order to be able to route emissions from the wet seal fluid degassing system to a process.
Centrifugal Compressors	IV.G.1	Wet Seal Centrifugal Compressors - Maintenance and Corrective Actions to Meet Emission Limit	The costs associated with these maintenance and corrective actions vary significantly, from limited labor costs for a short repair activity to a significant capital cost of equipment and labor to repair and/or replace parts of the compressor. The EPA does not have specific costs for the range of maintenance and/or repairs that may be necessary to maintain a flow rate at or below than 3 scfm. [...] The EPA specifically solicits comments on the types of maintenance or corrective actions that may be required to maintain an emission rate of 3 scfm or less from wet seal degassing events, along with representative costs.
Centrifugal Compressors	IV.G.1	Wet Seal Centrifugal Compressors Located at Natural Gas Processing Plants - NSPS KKK Applicability	Owners and operators of wet seal centrifugal compressors have been complying with NSPS KKK since 1984. The EPA is requesting comments on whether it would provide more regulatory consistency for owners, operators, and implementing agencies if NSPS OOOOb were to incorporate all compliance options provided in NSPS KKK for wet seal centrifugal compressors at natural gas processing plants, as opposed to only proposing the compliance option of routing to a control or process proposed in this supplemental proposal.
Centrifugal Compressors	IV.G.1	Self-Contained Wet Seal Centrifugal Compressors - Emission Limit	The EPA recognizes that where there is venting of any emissions from these compressors, emissions would more than likely be nondetectable for leaks, or would be at a rate lower than 3 scfm. The EPA solicits comment on, and support for, whether a lower numerical limit is needed to demonstrate proper operation of self-contained wet seal centrifugal compressors and/or equivalency to the BSER. The EPA also solicits comment on the feasibility of measuring the flow rate of self-contained wet seal centrifugal compressors at a rate lower than 3 scfm.
Centrifugal Compressors	IV.G.1	Mechanical Wet Seal Designs	The EPA is continuing to evaluate mechanical wet seal designs and the comments it has already received on the issue, and is soliciting additional information on these and other wet seal compressor designs (with supporting emissions information) that are inherently low-emitting under operating conditions.

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Centrifugal Compressors	IV.G.1	Wet Seal Centrifugal Compressors - Maintenance and Corrective Actions to Meet Emission Limit	The costs associated with these maintenance and corrective actions vary significantly, from limited labor costs for a short repair activity to a significant capital cost of equipment and labor to repair and/or replace parts of the compressor. The EPA does not have specific costs for the range of maintenance and/or repairs that may be necessary to maintain a flow rate at or below than 3 scfm. [...] The EPA specifically solicits comments on the types of maintenance or corrective actions that may be required to maintain an emission rate of 3 scfm or less from wet seal degassing events, along with representative costs.
Combustion Control Devices/Across Sources	IV.H.2	Unassisted and Assisted Flares in the Oil and Gas Sector	The EPA finds that the provisions at 40 CFR 60.18 are sufficient for unassisted flares because the heat content of the gas at the flame is not diluted by an assist stream of gas or air. The EPA requests comment on the universe of unassisted and assisted flares in the oil and gas sector.
Combustion Control Devices/Across Sources	IV.H.3	Control Device Performance Criteria	NSPS OOOO and NSPS OOOOa do not include criteria to determine that temperature is (or is not) correlated with control device performance. Criteria where temperature is well correlated could include requirements that air flow to the burner is controlled and that there is sufficient refractory in the stack to maintain high temperature even at low flows. The EPA requests comment on whether criteria should be developed for NSPS OOOOb and EG OOOOc, which delineate when temperature is (or is not) correlated with control device performance, and if so, in addition to the criteria above, what criteria would be appropriate.
Combustion Control Devices/Across Sources	IV.H.3	Continuous Monitoring - Monitoring Vent Gas Flow Rate	Owners and operators would be required to install a back pressure regulator or continuously monitor the vent gas flow rate to ensure that it is above this minimum level whenever vent gas is sent to the flare or enclosed combustion device. The EPA is soliciting comment on this additional requirement and whether there are situations where continuous monitoring of the vent gas flow rate is unnecessary.
Combustion Control Devices/Across Sources	IV.H.3	Control Devices - Requirements	The EPA is soliciting comment on all proposed requirements for control devices described within this section.
Covers and Closed Vent Systems/Across Sources	IV.K.1	OGI Monitoring Requirements - Simple and Complex Scenes	The EPA considers the use of more frequent surveys (monthly to quarterly) using approved screening technologies and either annual (if required based on minimum detection threshold and frequency) or OGI surveys resulting from emissions detected during screening would ensure equivalent compliance assurance of the no identifiable emissions standard as the quarterly OGI surveys paired with monthly or bimonthly AVO inspections. The EPA solicits comments on the use of the alternative periodic screening approach as an alternative compliance assurance for covers and CVS associated with affected/designated facilities, and we solicit comments that the minimum detection thresholds summarized in Tables 20 and 21 (section IV.B) are suitable for this purpose.
EG OOOOc Standards-NSPS Subpart KKK	III.D	Comparison of Fugitive Emissions Monitoring at Small Well Sites and Compressor (Centrifugal and Reciprocating) Requirements	The EPA is soliciting comment on all aspects of the proposed comparison of standards in the older NSPS to the proposed presumptive standards in EG OOOOc. Specifically, the EPA is requesting comment relevant to the comparison of stringency for compressors (both centrifugal and reciprocating) to NSPS KKK and for fugitive emissions monitoring at small well sites.
Equipment Leaks at Natural Gas Processing Plants	IV.L.1	No Detectable Emissions Standard - Bimonthly Monitoring Requirement	[T]he EPA is also proposing to require OGI monitoring of each pressure relief device after each pressure release, as it is important to ensure the pressure relief device has reseated and is not allowing emissions to vent to the atmosphere. The EPA is soliciting comment on this change from a no detectable emissions standard to a bimonthly monitoring requirement. Where the EPA Method 21 option is used, we are proposing quarterly monitoring of the pressure relief device in addition of monitoring after each pressure relief. A leak is defined as an instrument reading of 500 ppm or greater when using EPA Method 21.
Establishing Standards of Performance in State Plans	V.B.3	State Implementation Plan (SIP) Standard Operating Procedures (SOP)	[T]he EPA proposes for purposes of EG OOOOc, per the authority of CAA sections 111(d) and 116, states may include more stringent standards of performance in their plans and that the EPA must approve and render such standards as federally enforceable, so long as the minimum requirements of the EG and subpart Ba are met. The EPA solicits comment on its proposal as described in this section.
Establishing Standards of Performance in State Plans	V.B.6	Meaningful Engagement	The EPA is soliciting comment on the proposed definitions of meaningful engagement and pertinent stakeholders as well as the inclusion of meaningful engagement requirements in completeness criteria for state plan submission. The EPA also solicits comments on examples or models of meaningful engagement by states, including best practices and challenges.

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Establishing Standards of Performance in State Plans	V.B.6	Meaningful Engagement	The EPA is soliciting comment on how meaningful engagement should apply to pertinent stakeholders inside and outside of the borders of the state that is developing a state plan, for example, if a state should coordinate with the neighboring state and/or tribes for engagement or directly contact the affected communities.
Establishing Standards of Performance in State Plans	V.B.6	Meaningful Engagement	The EPA is soliciting comment on the distinction between request for approval of alternate state procedures to meet public notice and hearing requirements from those to meet meaningful engagement, and comment on the consideration of request for approval of alternate meaningful engagement procedures.
Establishing Standards of Performance in State Plans	V.C	Components of State Plan Submission - Electronic Submittal of Plans	The EPA requests comment on whether the EPA should provide for electronic submittals of plans as an option instead of as a requirement. The EPA requests comment on whether a requirement for electronic submissions of CAA section 111(d) state plans should be via SPeCS or whether another electronic mechanism should be considered as appropriate for CAA section 111(d) state plan submittals.
Establishing Standards of Performance in State Plans	V.D	Timing of State Plan Submissions and Compliance Times - State Plan Submission Deadline	The EPA is soliciting comment on the proposed 18-month state plan submission deadline upon publication of the final EG OOOOc, and the analysis supporting the EPA's proposed determination regarding the amount of time reasonably necessary for plan development and submission. The EPA is also soliciting comment on whether the EPA should consider any other factors in setting this deadline.
Establishing Standards of Performance in State Plans	V.D	Compliance Schedule for Designated Facilities - Remaining Useful Life and Other Factors	The proposed state plan submission timeline of 18 months should adequately provide time for states to conduct the analyses required by this provision; however, the EPA is soliciting comment on whether states will need additional time in the plan development to account for instances where RULOF is considered. The EPA is specifically requesting comment on how much additional time might be required for this consideration and how that additional time fits within the entire process of state plan development.
Establishing Standards of Performance in State Plans	V.D	Final Control Plan Proposal - Timing and Requirements	The EPA is proposing that the final control plan include a compliance plan for each designated facility, but a company would be allowed to submit one plan that covers all of the company's designated facilities in the State in lieu of submitting a plan for each designated facility. [...] The EPA solicits comment on the timing and requirements of this final control plan proposal.
Establishing Standards of Performance in State Plans	V.D	Notification of Final Compliance Report - Timing and Requirements	The EPA determined that requiring a notification of final compliance report that was submitted before the first annual report was more closely aligned with the intent of a final compliance increment of progress step. The EPA solicits comment on this proposed notification of final compliance report.
Executive Summary	I.C	Costs and Benefits	The EPA solicits comments on any relevant data, appropriate methodologies, or reliable estimates to help quantify the costs, emissions reductions, benefits, and potential distributional effects related to super-emitter events, the proposed emissions control requirements for associated gas from oil wells, and the proposed storage vessel control requirements at centralized production facilities and in the gathering and boosting segment.
Fugitive Emissions	IV.A	BSER - Single Wellhead Monitoring for Leak Detection	The EPA is proposing that the BSER for single wellhead only well sites is monthly AVO inspections for indications of potential leaks, with specific attention given to ensuring surface casing valves are closed to prevent the venting of emissions. The EPA is soliciting comment and additional data related to the costs and other potential causes of emissions on a single wellhead that could easily be identified using AVO inspections.
Fugitive Emissions	IV.A	Identification of Owners/Operators of Facilities - Change of Ownership	Because a well site could have a long useful life, during which there may be different owners or operators, the EPA is proposing to require owners and operators to report, through the annual report, any changes in ownership at individual well sites so that it is clear who the responsible owners and operators are until the site is plugged and closed and fugitive emissions monitoring is no longer required. We propose this reporting requirement as an important step in maintaining transparency for the responsible owner or operator and will also prevent well sites from becoming orphaned in the future. The EPA solicits comment on this additional reporting requirement, including other mechanisms for obtaining this information.
Fugitive Emissions - Well Closure	IV.A	Well Closure Notification/Monitoring Provisions	The EPA is also proposing to require that owners and operators submit a notification to the Agency 60 days before beginning well closure activities. The EPA solicits comment on additional provisions that could be added, including, for example, automatic consequences for missed monitoring reports, as a means of assuring that companies remain engaged with the site, including conducting monitoring, until all the wells at the site are properly closed.

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Fugitive Emissions - Well Closure	IV.A	Post Well Closure Planning and Monitoring Requirements	The EPA is proposing that when the well closure activities have been completed, prior to ceasing regular monitoring, the owner or operator would be required to conduct a survey of the well site using OGI. […] The EPA assesses [that] the continued monitoring of well sites will help identify emissions and maintain the well site such that it does not fall into disrepair. The EPA is soliciting comment on these planning and monitoring requirements.
Fugitive Emissions - Well Sites	IV.A	BSER - Single Wellhead Monitoring for Leak Detection Costs and Emissions Data	The EPA finds that the BSER for single wellhead only well sites is quarterly AVO inspections for indications of potential leaks, with specific attention given to ensuring surface casing valves are closed to prevent the venting of emissions. The EPA is soliciting comment and additional data related to the costs and other potential causes of emissions on a single wellhead that could easily be identified using AVO inspections.
Fugitive Emissions - Well Sites	IV.A	Affected Facility Definition - Small Well Sites	Given all of the factors described in this section (fewer equipment, less emissions, many are owned and operated by small businesses, do not contain leak-prone equipment that needs OGI to identify emissions), the EPA is proposing monthly AVO surveys and the closed and sealed requirement for thief hatches as the BSER for reducing fugitive emissions at small well sites. The EPA is soliciting comment on this definition for small well sites, including whether additional metrics should be used beyond equipment counts, and the proposed standards and requirements.
Fugitive Emissions - Well Sites	IV.A	Multi-Wellhead Only Well Site Proposed Standard	The annual cost of quarterly OGI monitoring is $3,037, whereas the annual cost of the combined OGI and AVO program is $2,489. For a combined semiannual OGI and quarterly AVO program the same number of surveys would be conducted at the site (with 2 surveys being OGI with AVO and 2 surveys being AVO only). The EPA is proposing the combined program of semiannual OGI with quarterly AVO as the BSER for multi-wellhead only well sites because of the comparable emissions reductions, same number of total surveys per year, and lower annual costs for the program overall. The EPA solicits comment on this proposed standard, including the basis for the decision to propose semiannual OGI with quarterly AVO inspections rather than quarterly OGI.
Fugitive Emissions - Well Sites	IV.A	Well Sites and Centralized Production Facilities Proposed Standard	Next the EPA evaluated the costs of a combined program for well sites and centralized production facilities, using quarterly OGI as a baseline with AVO inspections added at bimonthly, and monthly frequencies to determine if this combined program would be as effective as, but less expensive than, bimonthly OGI. The EPA did not evaluate annual, semiannual, or quarterly AVO inspection frequencies because those would occur at the same time as at least one of the OGI surveys if the EPA were to require quarterly OGI monitoring for well sites and centralized production facilities with major production and processing equipment. However, the EPA is soliciting comment on the costs and effectiveness of a combined program of quarterly OGI surveys in combination with quarterly AVO inspections that are offset by one month, such that eight total fugitive surveys would take place over the course of a year.
Fugitive Emissions - Well Sites	IV.A	Fugitive Emissions - Well Site Model Plants	[...] [F]or purposes of summarizing the component counts, the EPA is including small well sites in Table 7 along with the details of the number and type of equipment included in each of the model plants used for emissions modeling. The EPA finds that evaluating several types of model plants based on equipment and component counts is consistent with the empirical literature on fugitive emissions, including the conclusion from the U.S. Department of Energy's (DOE) recent marginal well study that a strong correlation was observed between the major equipment count and the frequency of fugitive emissions. The EPA is soliciting comment on the proposed model plants described in Table 7. The EPA is also seeking information on how to refine its approach to modeling fugitive emissions in the model plants developed for this analysis.
Fugitive Emissions - Well Sites	IV.A	Fugitive Emissions - Well Site Model Plants	The results of these models provide an estimate of the number of leaks identified during an inspection and the potential emissions reductions, which the EPA then applied to its cost-effectiveness analysis to determine the BSER for each well site model plant. The EPA is seeking information on its estimates of repair costs associated with identified leaks.
Fugitive Emissions - Well Sites	IV.A	Well Site Monitoring - AVO Inspection Program Costs	More detailed information on the capital and annual costs estimated for the AVO inspections can be found in the Supplemental TSD for this action located at Docket ID No. EPA-HQ-OAR-2021-0317. The EPA is soliciting comment on all aspects of the estimated costs of the AVO inspection program, including labor rates and the costs of repair.

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Fugitive Emissions - Well Sites	IV.A	Well Sites and Centralized Production Facilities Proposed Standard	[T]he EPA finds that the BSER for well sites and centralized production facilities with major production and processing equipment is quarterly OGI surveys combined with bimonthly AVO inspections and therefore is proposing this combined program as the standard for reducing fugitive emissions at these sites. The EPA solicits comment on this proposed standard, including the basis for the decision to propose quarterly OGI monitoring with bimonthly AVO inspections rather than bimonthly OGI monitoring.
How Does the EPA Consider Costs/Across Sources	III.E	EPA Control Cost Approaches and Resulting Analyses	In its cost-effectiveness analyses, the EPA recognized and took into account that these multi-pollutant controls reduce both VOC and methane emissions in equal proportions, as reflected in the single-pollutant and multipollutant cost effectiveness approaches for the proposed NSPS OOOOb. The EPA also considered cost saving from the natural gas recovered instead of vented due to the proposed controls. Based on all of the considerations described, the EPA concludes that the costs of the controls that serve as the basis of the standards proposed in this action are reasonable. The EPA solicits comment on its approaches for considering control costs, as well as the resulting analyses and conclusions.
Impacts of the Proposed Rule	VII.A	What are the Air Impacts	The EPA did not estimate impacts after 2035 for reasons including limited information, as explained in the RIA , though the EPA is soliciting comment on whether information exists to better characterize the likely effects beyond 2035.
Impacts of the Proposed Rule	VII.E	Monetized Climate Benefits	We invite the public to comment on both the sensitivity analysis of the monetized climate benefits and the accompanying external review draft technical report that the EPA has prepared that explains the methodology underlying the newer set of SC-CH4 estimates.
Inflation Reduction Act	III.G	IRA Equivalence Determination	[T]he EPA considers the implementation of the Methane Emissions and Waste Reduction Incentive Program to be outside the scope of this supplemental proposed rule. However, the EPA is requesting comments on the criteria and approaches that the Administrator should consider in making the CAA section 136(f)(6)(A)(ii) determination ("IRA equivalence determination") because the EPA expects that the public and regulated industry will be interested in how the scope of the final oil and gas standards and emission guidelines may influence the applicability of the statutory exemption.
Inflation Reduction Act	III.G	CAA section 136(f)(6)(A)(ii) Equivalence Evaluation Factors and Assumptions	[T]he statutory language in CAA section 136(f)(6)(A)(ii) does not indicate how the EPA should conduct this equivalency evaluation and what factors should influence how the EPA conducts the comparison. Because of this ambiguity in the statutory language, the EPA is requesting comments on how to best conduct this evaluation and on factors and assumptions the EPA should consider in conducting such an evaluation.
Inflation Reduction Act	III.G	CAA section 136(f)(6)(A)(ii) Equivalence Evaluation Factors and Assumptions	First, the EPA seeks comments on temporal elements of the evaluation. The EPA believes that the appropriate temporal comparison should be based on when requirements are fully implemented by the sources (i.e., if a state phases in installation of zero-emitting pneumatic controllers over more than one year, the comparison should be made at the point that the emission guidelines require full use of zero-emitting controllers). The EPA seeks comment on this approach versus an alternative such as making a multi-year comparison beginning with the effective date of the rule.
Inflation Reduction Act	III.G	CAA section 136(f)(6)(A)(ii) Equivalence Evaluation Factors and Assumptions	Second, the EPA seeks comments on geographical elements of the evaluation. Per the statutory language in CAA section 136(f)(6)(A)(i), the EPA's evaluation is to be done with respect to all states. The EPA requests comments on whether we should consider making a national evaluation of equivalency or whether we should consider a state-by-state evaluation instead.
Inflation Reduction Act	III.G	CAA section 136(f)(6)(A)(ii) Equivalence Evaluation Factors and Assumptions	Third, the EPA requests comments on whether the EPA should make the evaluation and the IRA equivalency determination in advance of states having submitted fully approvable plans or instead make the evaluation and IRA equivalency determination at a later date once the standards of performance pursuant to CAA section 111(b) and 111(d) are fully promulgated (e.g., the EPA has approved state plans and/or developed a Federal Plan). In particular, the EPA request comments on whether the EPA's analysis should compare the November 2021 EG proposal and final EG OOOOc by assuming designated facilities would be subject to their corresponding EG presumptive standards once state plans are implemented, or whether we should compare the November 2021 EG proposal to the actual state plans that are approved. As to the latter approach, the EPA seeks comments on how a state's invocation of RULOF to apply a less stringent standard to a designated facility might affect the equivalency evaluation and IRA equivalency determination.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Inflation Reduction Act	III.G	IRA Equivalence Determination	In establishing standards of performance for individual sources, CAA section 111(d) and the EPA's regulations provide that states may invoke RULOF for the application of less stringent standards provided they meet the certain requirements established in the EPA's regulations and the EG (see section V.B.3 below). [...] The EPA requests comments on whether and how to account for the potential application of RULOF in state plans in the IRA equivalency determination and whether it would be appropriate to conduct any evaluation without considering the application of RULOF.
Inflation Reduction Act	III.G	Approaches for Examining Economic Impacts	The EPA acknowledges the potential interplay between the provisions in this proposed rule and the Methane Emissions and Waste Reduction Incentive Program and invites comment on approaches for examining the economic impacts of these programs individually and collectively.
Leveraging State Programs	V.B.2	Types of Equivalency Evaluations - Total Program Evaluation	[T]he EPA does not think a total program evaluation would guarantee that the same emissions reductions as required by the EG would be achieved. The EPA solicits comments on how a total program evaluation could be established in a way that would address the complexities of the Crude Oil and Natural Gas source category and concerns the EPA has identified.
Leveraging State Programs	V.B.2	Types of Equivalency Evaluations - Source by Source Evaluation Criteria and Methodology	The EPA solicits comment on the EPA's proposed state program equivalency demonstration methodology and evaluating criteria for when state plans may include standards of performance based on an equivalency demonstration. Specifically, the EPA solicits comments on other criteria than what the EPA is proposing should be considered; and whether there are other additional qualitative factors/criteria need to be included to make an effective stringency evaluation for different types of different design, equipment, work practice, and/or operational standards.
Methane Measurement Technologies	I.A	Periodic Screening and Continuous Monitoring Alternatives to OGI	[T]he EPA is seeking comment and information on the proposed provisions for the use of advanced methane measurement technologies for both periodic screening and continuous monitoring as an alternative to OGI.
National Technology Transfer and Advancement (NTTAA)	VIII.I	Voluntary Consensus Standards (VCS) - Acceptable Alternatives to EPA's Test Methods	All potential standards were reviewed to determine the practicality of the voluntary consensus standards (VCS) for this rule. Two VCS were identified as an acceptable alternative to EPA test methods for the purpose of this proposed rule. [...] The EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially-applicable VCS and to explain why such standards should be used in this regulation.
Oil Wells with Associated Gas	IV.F.2	Emerging Technologies that Provide Uses for the Associated Gas	[T]he EPA is soliciting additional information on potential emerging technologies that provide uses for the associated gas in a beneficial manner other than routing to a sales line, using as a fuel, or reinjecting the gas. Examples of such emerging technologies provided by commenters include methane pyrolysis and condensing the gas and transporting it to other sites for use.
Oil Wells with Associated Gas	IV.F.2	Emerging Technologies - Utilization of Associated Gas	This proposed rule would require any of the following options for beneficial use: (1) routing associated gas from oil wells to a sales line; (2) using the associated gas as a fuel or for another useful purpose that a purchased fuel or raw material would serve; (3) or reinjecting the associated gas into the well or injecting the associated into another well for enhanced oil recovery. [C]ommenters also mentioned examples of emerging techniques that provide additional beneficial uses of the associated gas, including compressing the gas and transporting it to a nearby processing plant or pipeline and methane pyrolysis. The EPA interprets the third criterion, "used for another useful purpose," to include these emerging techniques but is soliciting comment whether an additional criterion should be added to make this clear. The EPA is also soliciting comment on more specific technologies that have been proven to be viable in the field to utilize associated gas and avoid venting or flaring.
Oil Wells with Associated Gas	IV.F.2	Control Devices - Onsite Temporary Control Devices	It is anticipated this control device would need to be permanently installed to account for these periods when associated gas could not be routed to a sales line or used for other beneficial purposes, but the EPA is soliciting comment on whether the use of temporary controls could also serve this purpose. Further the EPA is soliciting comment on what additional requirements would be necessary to ensure a temporary control device is onsite and operational to immediately control emissions when necessary for these circumstances. Venting of the associated gas under any circumstances would represent a violation of the proposed standards, even if for a short period.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Paperwork Reduction Act (PRA)	VIII.B	Proposed Templates for the Semiannual and Annual Reports	The information collection activities in the proposed amendments for 40 CFR part 60, subparts OOOOb and OOOOc, have been submitted for approval to the OMB under the PRA. The ICR document that the EPA prepared has been assigned OMB Control No. 2060-0721 and EPA ICR number 2523.05. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here. As noted in section IV.N of this supplemental preamble, draft versions of the proposed templates for the semiannual and annual reports for these subparts are included in the docket for this action, and the EPA specifically requests comment on the content, layout, and overall design of the templates.
Pneumatic Controllers	IV.D.1	Affected Facility, Modification, and Reconstruction	As noted above, the comments that the EPA received on the pneumatic controller affected facility definition in the November 2021 proposal all advocated for a change in the definition from a single controller to the collection of all onsite pneumatic controllers. However, the EPA did not specifically solicit comment on the particular question of how to define the affected facility in November. Now that the EPA is proposing in this supplemental proposal to define the affected facility as the collection of natural gas-driven continuous bleed and intermittent vent controllers at a site, the EPA solicits comment on the proposed changed definition.
Pneumatic Controllers	IV.D.1	Affected Facility, Modification, and Reconstruction	Based on information provided by industry commenters, the EPA believes that owners and operators will implement zero-emissions controllers across a site when a modification occurs because converting a single pneumatic controller to a zero-emitting device typically requires converting all controllers at the facility to zero-emitting devices. The EPA solicits comment on the ways in which a modification to a pneumatic controller affected facility would occur in light of the affected facility definition proposed herein, which includes the collection of all natural gas-driven continuous bleed and intermittent vent controllers at a site.
Pneumatic Controllers	IV.D.1	Affected Facility, Modification, and Reconstruction	The EPA is proposing that the standard in 40 CFR 60.15(b)(1) specifying that the “fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility” can be met through a showing that more than 50 percent of the number of existing onsite controllers are replaced. Therefore, upon such a showing, an owner or operator may demonstrate compliance with the remaining provisions of 40 CFR 60.15 that reference the “fixed capital cost” criterion. The EPA solicits comment on its proposal to add an option for owners or operators to use in determining whether reconstruction occurs by showing the number of components replaced. The EPA reiterates that this proposed option would supplement the existing option of determining replacements by fixed capital cost, as set forth in 40 CFR 60.15.
Pneumatic Controllers	IV.D.1	Controller Replacement Timeline	In the Administrator's judgment, the 2-year rolling period provides a reasonable method of determining whether an owner of an oil and natural gas site with pneumatic controllers is actually proposing extensive controller replacement, within the EPA’s original intent in promulgating 40 CFR 60.15. The EPA solicits comment on this proposed 2-year rolling aggregation period for all continuous programs of pneumatic controller and pneumatic pump replacement (see section IV.E.b.i. for a discussion of proposing the same approach for determining reconstruction for pneumatic pumps). The EPA is particularly interested in comments regarding whether this approach will make it easier for owners and operators to determine reconstruction at their sites, whether using a set time frame is reasonable and feasible to put into practice, whether two years is an appropriate timeframe, and whether a rolling basis for the two-year time frame is a reasonable calculation (for example, see Scenario 5 below). The EPA is also interested in understanding how frequently controllers and pumps are typically replaced.
Pneumatic Controllers	IV.D.1	Controller Replacement Timeline	EPA specifically solicits comment on whether the two-year time frame should be implemented on a rolling basis or as a discrete time period.
Pneumatic Controllers	IV.D.1	Reconstruction - Other Source Categories/Component Replacement	The EPA is interested in comments regarding whether any other source category would benefit from either: 1) adding an option to determine reconstruction based on the number of components replaced (in addition to the existing option of determining replacements by fixed capital cost, as set forth in §60.15), and/or 2) setting a specific time period within which replaced components will be aggregated toward the greater than 50 percent replacement threshold (assessed either by number or cost), e.g., any two-year period beginning when a continuous program of component replacement commences.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Pneumatic Controllers	IV.D.1	Controller Replacement Timeline	EPA specifically solicits comment on whether the two-year time frame should be implemented on a rolling basis or as a discrete time period. [Consider the following:] Scenario 5: replacement of four of the pneumatic controllers is commenced in January in year 1; replacement of two more controllers is commenced the following April in year 2 (15 months later); replacement of two more is commenced the following March in year 3 (26 months after initiating replacement in January); and replacement of four more is commenced that August of year 3 (31 months after initiating replacement in January). Only six controllers of the 15 controllers were replaced in the two-year time period that began in January of year 1, and therefore would not meet the proposed reconstruction definition. However, when considering a rolling 2-year basis, 8 of the 15 controllers have been replaced over years 2 and 3, which would meet the proposed reconstruction definition.
Pneumatic Controllers	IV.D.1	Reconstruction-Based on Number of Components Replaced/Replacement Time Period	The EPA also solicits comment on whether it would be appropriate to apply either of the two elements of reconstruction that the EPA is proposing for pneumatic controllers (and pneumatic pumps, as described in section IV.E.) to any other affected facility in NSPS OOOOb and EG OOOOc. Specifically, the EPA is interested in comments regarding whether any other source category would benefit from either: 1) adding an option to determine reconstruction based on the number of components replaced (in addition to the existing option of determining replacements by fixed capital cost, as set forth in §60.15), and/or 2) setting a specific time period within which replaced components will be aggregated toward the greater than 50 percent replacement threshold (assessed either by number or cost), *e.g.* , any two-year period beginning when a continuous program of component replacement commences.
Pneumatic Controllers	IV.D.1	Use and Costs of Generators at Sites Without Access to the Grid	The EPA is specifically requesting more detailed information on the use of generators at sites without access to the grid to power pneumatic controllers, primarily to power instrument air systems. The EPA is also interested in receiving more information on the costs associated with this equipment.
Pneumatic Controllers	IV.D.1	Natural Gas Backup System	[A] natural gas backup system would be used in the case of electrically actuated controller failure, loss of power, or other contingencies. The EPA is interested in understanding these backup systems more fully. In particular, the EPA is requesting information on these systems regarding how frequently and for how long these systems are used or would be expected to be used. The EPA is concerned that allowing these backup systems would result in a potential loophole that would enable owners or operators to continue to use natural gas-driven controllers in routine situations. Therefore, the EPA is interested in how the use of these systems could be narrowly defined and how a clear distinction could be drawn between the allowed use of these backup systems and violations of the zero emissions standard.
Pneumatic Controllers	IV.D.1	BSER Analysis - Temporary Equipment - Examples/Zero-Emission Solutions	The EPA acknowledges that the focus of the BSER analysis has been on stationary sources and pneumatic controllers that are part of the routine operation of oil and natural gas facilities. Although some type of alternative approach may be warranted for pneumatic controllers associated with temporary operations, we lack sufficient information to include an exemption, or perhaps alternative standards, for pneumatic controllers associated with temporary equipment. Therefore, the EPA is requesting more information on these situations. The EPA would like specific examples of when temporary equipment is utilized, the function of the controllers during this time, how they are powered, and the typical duration of their usage. The EPA also requests information explaining in detail why the zero-emission solutions that are used for the permanent equipment at the site cannot be also utilized for this temporary equipment.
Pneumatic Controllers	IV.D.1	Routing to a Process	The EPA is interested in several aspects related to the option of collecting the pneumatic controller emissions and routing them to a process. First, we are soliciting information that describes specific situations where owners and operators have utilized this option to use, rather than lose, the valuable natural gas emitted from pneumatic controllers. We are interested in the specific processes and equipment needed, as well as their costs.
Pneumatic Controllers	IV.D.1	VRU Applicability	The EPA requests information on the assumption that installation of VRUs would not be needed to enable the use of emissions from pneumatic controllers in a process. If there are situations where a VRU is needed, the EPA is interested in the conditions that result in this need, as well as the emissions reduction achieved and the costs.
Pneumatic Controllers	IV.D.1	Self-Contained Controllers - Technical Feasibility	We are aware of technical limitations of self-contained controllers, namely that their applicability is limited by a number of conditions (*e.g.,* pressure differential, downstream pressure, etc.). The EPA is therefore specifically soliciting information on the frequency of the use of these self-contained controllers in the field, as well as confirmation of specific limitations and costs.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Pneumatic Controllers	IV.D.1	Zero-Emission Controllers - Technical Feasibility	We are aware of technical limitations of self-contained controllers, namely that their applicability is limited by a number of conditions (*e.g.,* pressure differential, downstream pressure, etc.). […] We are also interested in information to support our understanding that self-contained controllers achieve 100 percent reduction in emissions when maintained and operated properly.
Pneumatic Controllers	IV.D.1	Zero-Emission Controllers - Technical Feasibility	For pneumatic controllers, the EPA maintains that there is a technically feasible option available for all production, processing, and transmission and storage sites, except for sites in Alaska without access to electricity. Therefore, the proposed NSPS OOOOb does not include any alternative non-zero emission standards for pneumatic controllers. The EPA is interested in information that may dispute the conclusion that there is a technically feasible option that does not emit methane or VOC available for all sites in all segments.
Pneumatic Controllers	IV.D.2	Supply Chain Issues	While the commenters primarily focused on potential supply chain issues related to requiring the conversion to zero emissions controllers at existing sources, the EPA also understands that the promulgation of NSPS OOOOb could also result in a spike in the demand. In light of these comments, the EPA is specifically requesting additional comment on the availability of zero-emission pneumatic controller systems not powered by natural gas due to supply chain constraints or other reasons.
Pneumatic Pumps	IV.E.1	Pneumatic Pumps - Use of Generators	Instrument air systems can also be utilized at sites without access to the electricity grid, but these would require the installation and operation of a generator. These generators could be powered by engines fueled by solar energy, natural gas, or diesel. [...] While this is a technically viable option at these remote sites, we did not have detailed cost information available to include these systems in our analysis. [...] The EPA is specifically requesting more detailed information on the use of generators at sites without access to the grid to power pneumatic controllers, primarily to power instrument air systems. The EPA is also interested in receiving more information on the costs associated with this equipment.
Pneumatic Pumps	IV.E.1	Definition of a Pneumatic Pump Affected Facility	In this supplemental proposal, a pneumatic pump affected facility is defined as the collection of all natural gas-driven pneumatic pumps at a site. […] We are specifically soliciting comment on this proposed change to the definition of a pneumatic pump affected facility from an individual pump to the collection of all natural gas-driven pneumatic pumps at a site.
Pneumatic Pumps	IV.E.1	Definition of a Pneumatic Pump Affected Facility	The EPA believes that owners and operators will implement zero-emission pumps across a site when a modification occurs because converting a single zero-emitting device typically requires a conversion of all devices at the facility. The EPA solicits comment on the ways in which a modification to a pneumatic pump affected facility would occur in light of the affected facility definition proposed herein, which includes the collection of all natural gas-driven pneumatic pumps at a site.
Pneumatic Pumps	IV.E.1	Routing to a Process - Information on Processes, Equipment and Percent Reduction in Emissions	The EPA is interested in several aspects related to the option of collecting the pneumatic pump emissions and routing them to a process. First, we are soliciting information that describes specific situations where owners and operators have utilized this option to use, rather than lose, the valuable natural gas emitted from pneumatic pumps. We are interested in gathering information on the specific processes and types of equipment that are needed to do so, as well as information on the related costs. We are also interested in information to support our understanding that routing to a process achieves a 100 percent reduction in emissions.
Pneumatic Pumps	IV.E.1	Routing to a Process - Percent Reduction in Emissions	We are also interested in information to support our understanding that routing to a process achieves a 100 percent reduction in emissions. This understanding is based on the fact that the gas that is emitted from pneumatic pumps is drawn directly from the raw product gas stream that will be collected and routed to a gathering and boosting station and eventually to a natural gas processing plant (*i.e* ., the gas "sales line"). Therefore, the emissions from the pneumatic pumps are of the same composition as the gas in the sales line. Since the emissions are at atmospheric pressure, it is likely that the gas would need to be compressed prior to re-introduction to the sales line. We do not expect that this compression would result in emissions. Similarly, since the composition of these emissions is typically high in methane, the heat content would make it amendable to being used as fuel, or introduced with the primary fuel stream for use in an engine without the need for additional processing that could result in emissions.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Pneumatic Pumps	IV.E.1	Vapor Recovery Unit (VRU) Applicability	This request for information includes information on the installation of VRUs. Note that the analysis above did not include the installation of a new VRU. As discussed in section IV.D.1.b.iii for pneumatic controllers, we do not believe that a VRU would be needed to enable the use of the emissions from pneumatic pumps (in contrast to emissions from storage vessels and centrifugal compressor wet seal fluid degassing systems).
Pneumatic Pumps	IV.E.1	Vapor Recovery Unit (VRU) Applicability and Costs	EPA did analyze the costs to install a new VRU to process the emissions from pneumatic pumps to enable the routing to a process. We determined that these costs were unreasonable, given the emission reductions. One commenter felt that our VRU costs were inflated. We are interested in learning about situations where a VRU would be needed to enable the use of emissions from a pneumatic pump in a process, as well as the costs of those VRUs.
Pneumatic Pumps	IV.E.2	Supply Chain Issues	EPA is specifically requesting comment on the availability of pneumatic pump systems not powered by natural gas.
Purpose of the Regulatory Action	I.A	Labor Requirements to Implement Fugitives Monitoring Requirements	In contrast to the November 2021 proposal, this supplemental proposal would establish an obligation for all well sites to routinely monitor for fugitive emissions and repair leaks found – ranging from a quarterly audio, visual, and olfactory (AVO) inspection for single wellhead-only sites to quarterly optical gas imaging (OGI) inspections for any site with significant production equipment. This revised approach to addressing fugitive emissions from well sites also would carry the monitoring requirements through the entire life of the well site and would specify the requirements for ceasing monitoring following well closures when production from the entire well site has stopped. The EPA is seeking comments about labor requirements to implement these monitoring requirements.
Purpose of the Regulatory Action	I.A	Methane Identification and Quantification - Detection Limits of Monitoring and Inspection Requirements	Diverse stakeholders expressed strong interest in employing these new tools for methane identification and quantification, particularly for super-emitters, and in the EPA's creation of a regime to promote and accommodate their development and use. This proposal provides an approach for fostering those alternatives, which could provide a template for future innovation-conducive regulatory standards. The EPA is also seeking comment on the detection limits of all monitoring and inspection requirements.
Reciprocating Compressors	IV.I.1	Monitoring - Proposed Performance Test Methods	[T]he EPA is proposing the use of volumetric flow rate which meet the requirements of Method 2D (40 CFR Part 60, Appendix A) for testing emissions from reciprocating compressor rod packing and the use of a high-volume sampler to measure the emissions from proposing either the reciprocating compressor rod packing or centrifugal compressor seal vents (dry seals for NSPS OOOOb and all centrifugal compressor wet and dry seals for EG OOOOc). For the high-volume sampler, instead of relying on manufacturer defined procedures required in GHGRP Subpart W, the EPA is proposing a defined set of procedures and performance objectives to ensure consistent application of these samplers. In an effort to allow for additional innovation for these types of measurements, the EPA is also proposing to allow other methods, subject to Administrator approval, that have been validated according to Method 301 (40 CFR Part 63, Appendix A). The EPA solicits comment on the use of the proposed performance test methods and solicits comment on other methodologies that could be used to demonstrate compliance with the centrifugal compressor dry seal vent, centrifugal compressors for EG OOOOc, and reciprocating compressor rod packing emission standards.
Reciprocating Compressors	IV.I.1	Routing to a Process - Control Efficiency/Prevalence	The EPA solicits comment on its assumption that the emissions reduced by requiring the capture of gas and routing to a process are greater than the requirement to maintain the flow rate from the reciprocating compressor rod packing at or below 2 scfm. The EPA also is soliciting comment on the prevalence of owners and operators complying with NSPS OOOO and NSPS OOOOa by capturing and routing emissions from the reciprocating compressor rod packing to a process.
Recordkeeping and Reporting/Across Sources	IV.N	CEDRI Templates	[O]wners and operators would be required to use the appropriate spreadsheet template to submit information to CEDRI for annual and semiannual reports. A draft version of the proposed templates for these reports is included in the docket for this action. The EPA specifically requests comment on the content, layout, and overall design of the templates.
Regulatory Flexibility Act (RFA)	VIII.C	Impacts on Small Entities	The complete IRFA is available for review in the RIA (see Section 4.3) and the EPA is soliciting comment on the presentation of its analysis of the impacts on small entities, particularly if there is value in presenting more granular information beyond a focus on entities above and below the SBA size classifications.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Remaining Useful Life and Other Factors	V.B.3	RULOF Proposed Requirement Considerations	The EPA recognizes that, in some instances, a designated facility may intend to retire imminently after the promulgation of an EG, and in such cases it may not be reasonable to require any controls based on the source's exceptionally short remaining useful life. In the case of an imminently retiring source, the EPA is proposing that the state apply a standard no less stringent than one that reflects the designated facility's business as usual. [...] The EPA solicits comment on the proposed requirements specific to the consideration of remaining useful life as described in this section.
Remaining Useful Life and Other Factors	V.B.3	RULOF List of Information Sources - Reliable and Adequately Documented Sources	The EPA proposes to require that the information used for a state's demonstrations under the new RULOF provisions must come from reliable and adequately documented sources, which presumptively include the following: EPA sources and publications, permits, environmental consultants, control technology vendors, and inspection reports. Requiring the use of such sources will help ensure that an accounting of RULOF is premised on legitimate, verifiable, and transparent information. The EPA solicits comment on the proposed list of information sources and whether other sources should be considered as reliable and adequately documented sources of information for purposes of the RULOF demonstration, including but not limited to reliable and adequately documented sources of cost information.
Remaining Useful Life and Other Factors	V.B.3	RULOF - EPA's Standard of Review for State Plans that Invoke Consideration of RULOF	The EPA solicits comment on the proposed requirements described in this section regarding the EPA's standard of review for state plans that invoke consideration of RULOF.
Remaining Useful Life and Other Factors	V.B.3	Environmental Justice (EJ) Considerations	[T]he EPA proposes in EG OOOOc to require that impacts to communities most affected by and vulnerable to the impacts from designated facilities be considered in both the state and Federal plan contexts when accounting for RULOF. The EPA solicits comment on the proposed requirements described in this section for consideration of vulnerable communities in the context of RULOF.
Remaining Useful Life and Other Factors	V.B.3	State Programs - Less Stringent Requirements	The EPA is soliciting comment on situations where state rules for industries other than the oil and natural gas industry include less stringent requirements for sources that are soon to retire. If these situations exist, the EPA is not only interested in the less stringent requirements as they compare to the "normal" standards, but also how the state evaluated the suitability of the less stringent requirements.
Remaining Useful Life and Other Factors	V.B.3	Threshold Requirements for Considering RULOF	The EPA solicits comment on the proposal to require states to demonstrate, as a threshold matter when determining whether a state may account for RULOF in order to set a less stringent standard, that the designated facility cannot reasonably apply the BSER to achieve the presumptive level of stringency determined by the EPA. The EPA further solicits comment on whether other considerations should inform the circumstances under which the EPA should permit RULOF to be used to set a less stringent standard for a particular designated facility. The EPA also discusses and solicits comments later in section V.B.3.g. on the types of information used to support a RULOF demonstration.
Remaining Useful Life and Other Factors	V.B.3	Calculation of a Standard which Accounts for RULOF	[T]he standard of performance that reflects the designated facility-specific BSER would be the same level of stringency as the degree of emission limitation achievable through application of the EPA's BSER. The EPA solicits comment on these proposed requirements for the calculation and form of the less stringent standard that accounts for remaining useful life and other factors.
Remaining Useful Life and Other Factors	V.B.3	Contingency Requirements	The EPA notes there may be circumstances under which a designated facility's operating conditions change permanently so that there may be a potential violation of the contingency requirements approved as federally enforceable components of the state plan. [...] The EPA requests comment on the proposed contingency requirements to address the concern that a designated facility's operations may change over time in ways that do not match the original rationale for a less stringent standard.
Request for Comments on All Aspects of Proposal/Across Sources	III.A	Request Comment on All Aspects of the Proposal	[T]he EPA is requesting comments on all aspects of the supplemental proposal to enable the EPA to develop a final rule that, consistent with our responsibilities under section 111 of the CAA, achieves the greatest possible reductions in methane and VOC emissions while remaining achievable, cost effective, and conducive to technological innovation.
Storage Vessels	IV.J.1	Combustion Efficiency and Monitoring	[T]he EPA proposed an emissions limit requiring 95 percent reduction as the BSER for reducing VOC and methane emissions from new, modified, or reconstructed storage vessel affected facilities. The EPA also requested comment on increasing combustion efficiency to 98 percent control and on requiring additional monitoring of the control device.

Table. Preamble Comment Solicitations/Requests

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Storage Vessels	IV.J.1	Costs of Replacement of Depreciable Components	For a tank battery which consists of a single storage vessel, it may be possible that the cost of replacing the thief hatch, pressure relief device or other depreciable components could exceed 50 percent of the cost of an entirely new storage vessel, therefore the EPA is proposing that the provisions of 40 CFR 60.15 would apply. The EPA requests comment on this assumption that the costs of replacement of all depreciable components on a single storage vessel could exceed 50 percent of the cost of an entirely new storage vessel.
Storage Vessels	IV.J.1	Reconstruction - 2-Year Replacement Time Frame	[T]he EPA is proposing to interpret natural gas-drive pneumatic controller and pneumatic pump replacements to include all natural gas-driven pneumatic controllers and pneumatic pumps which commence replacement (but are not necessarily completed) within any 2-year period in determining whether the replacements constitute reconstruction. The EPA solicits comment on whether to similarly set a specific time period (or rolling time period) within which replaced storage vessels in an existing tank battery will be aggregated towards determining whether the 50 percent replacement threshold has been exceeded, and if so, whether a 2-year time frame or another time frame is appropriate for determining reconstruction to a tank battery with more than a single storage vessel.
Storage Vessels	IV.J.1	Additional Monitoring - Thief Hatches	The EPA is soliciting comment on including a requirement to equip thief hatches with alarms, automated systems to monitor for pressure changes, or use of automatically closing thief hatches. Commenters noted that open thief hatches and deteriorated seals around tank openings are significant emissions sources at tank batteries.
Storage Vessels	IV.J.1	Storage Vessel - Thief Hatches and Automated Systems and Alarms	Commenters noted that open thief hatches and deteriorated seals around tank openings are significant emissions sources at tank batteries. [...] The EPA is soliciting information on the costs, operation, and feasibility of installing these automated systems, alarms, or the use of automatically closing thief hatches.
Super-Emitter Response Program	IV.C	Super-Emitter Event Proposed Program	[The EPA includes] a description of the specific criteria the EPA is proposing for notifications to sources of super-emitter events and subsequent corrective actions taken to eliminate the emissions. The EPA seeks comment on all aspects of this proposed program.
Super-Emitter Response Program	IV.C	Qualifications and Requirements for Notification of Super-Emitter Emissions Events	The EPA believes other facts necessary to rebut the information in a notification regarding a particular emissions event are likely to only be known by the owner and operator and are best presented in their written report to the EPA. Moreover, given the urgency with which the EPA believes such large emissions events should be addressed, any additional role for the EPA in the notification process would unnecessarily delay mitigation of ongoing harms. The EPA solicits comments on these conclusions, and whether there would be a meaningful benefit to a greater role for the EPA in reviewing and/or approving third-party notifications before the obligation of the owner or operator to respond is triggered. And if so, the EPA further solicits comment on what kind of role would be appropriate without meaningfully delaying the mitigation of the large emissions events this program is intended to target.
Super-Emitter Response Program	IV.C	Super-Emitter Response Program	[T]he EPA solicits comments on any relevant data, appropriate methodologies, or reliable estimates to help quantify the costs, emissions reductions, benefits, and potential distributional effects of this program (including, for example, benefits for communities with EJ concerns). We also take comment on how to improve the accuracy of our estimates of baseline emissions levels, emissions reduction opportunities, and the frequency and intensity of super-emitter events, and how to incorporate any recent, reliable estimates of methane emissions.
Super-Emitter Response Program	IV.C.2	Large Emission Events - Emerging Technologies	The EPA is proposing to allow the use of remote-sensing aircraft, mobile monitoring platforms, or satellites to identify super-emitter emissions events. The EPA is soliciting comment on this list of technology types that could be applied for the identification of super-emitter emissions events and the threshold of 100 kg/hr. of methane.
Super-Emitter Response Program	IV.C.2	Large Emission Events -Qualified Third-Party Notifiers	The EPA would maintain a public list of approved qualified third-party notifiers so owners and operators can verify approval before being required to act on a notification. These approved notifiers could be any third party, including but not limited to technology vendors, industry, researchers, non-profit organizations, or other parties demonstrating technical expertise as described. The EPA is soliciting comment on this approval criteria, including whether additional criteria would be appropriate.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Super-Emitter Response Program	IV.C.2	Large Emission Events - Notification Requirements	The EPA is proposing that each notification must contain specific information to help owners and operators verify the emissions are correctly linked to their site and aid in a focused investigation to swiftly identify the source of emissions. Specific information that would be required in each notification includes (1) the location of emissions in latitude and longitude coordinates, (2) description of the detection technology and sampling protocols used to identify the emissions, (3) documentation depicting the emissions and the site (*e.g.,* aerial photograph with emissions plume depicted), (4) quantified emissions rate, (5) date(s) and time(s) of detection and confirmation after data analysis that a super-emitter emissions event was present, and (6) a signed certification that the notifier is an EPA-approved entity for providing the notification, and the information was collected and interpreted as described in the notification. [...] We are soliciting comment on the specific required elements of the notification, including whether additional information should be necessary to aid in verifying the credibility of this information.
Super-Emitter Response Program	IV.C.2	Third-Party Notifier Approval	Third parties may also make such reports available to the public on other public websites. [...] The EPA is seeking comment on whether it should establish a procedure for owners and operators to suggest that EPA reconsider the approval granted to a third-party notifier.
Super-Emitter Response Program	IV.C.2	Root Cause Analysis and Corrective Action Reporting - Delegated State Report Submittals	[T]he EPA is proposing to require the submission of a written report within 15 days of completing the root cause and corrective action to the Agency and delegated state authority. In the case of a designated facility covered by a state plan, the EPA solicits comment on whether such written report should be sent to the state in addition to the EPA. The EPA would promptly post online all reports received from the owner-operator in response to a notice of super-emitter event.
Super-Emitter Response Program	IV.C.2	Large Emission Events - Documentation Requirements	This written report would include information such as the data included in the notification, the source of the emissions, corrective actions taken to mitigate the emissions, and the compliance status of the affected facilities. To the extent a deviation or potential violation is identified as the root cause of the emissions, the owner or operator would report that information. If the operator finds that emissions above the super-emitter threshold are not occurring, and there is no evidence that they may have occurred as reported, then the method for making that determination and the evidence in support should be included in the required report to the EPA. To the extent an owner or operator determines that the notification contains a demonstrable error (e.g., that the notifier was not a qualified third party, that the third party did not use the appropriate methane detection technology, or that the reported emissions event did not exceed the threshold), the report would need only include a description of the error and an explanation as to why, under these circumstances, a root cause analysis was not conducted. The EPA solicits comment on what other elements should be included in the owner-operator reports to the state and the EPA.
Super-Emitter Response Program	IV.C.2	Large Emission Events - Analysis and Completion of Corrective Action Timeframes	The EPA solicits comment on these proposed deadlines for initiating the analysis and completion of corrective actions. For comments requesting shorter or longer timeframes, we are requesting specific examples that would support any changes to this proposal.
Super-Emitter Response Program	IV.C.2	Cost-Effectiveness - Factors Affecting, Including Costs/Emissions Reduction Information	Because the costs of this program incurred by owners and operators, the length of time over which these events occur, and the emissions reductions that may be achieved have uncertainties associated with them, the EPA solicits comments on the various factors related to the cost-effectiveness of the super-emitter response program, including any information further detailing the costs and emissions reductions of this program.
Super-Emitter Response Program	IV.C.2	Large Emission Events - Event Notification Mechanisms	[T]he EPA is soliciting comment on the mechanism for identifying the owners and operators to receive the super-emitter emissions event notifications. Entities approved to make such notifications need a way to identify to whom they should be sent and how to assure they are received. The EPA specifically seeks comment on what mechanisms exist to make such identifications now, the reliability, accuracy, and timeliness of those mechanisms, and the difficulty or cost of accessing those mechanisms.
Super-Emitter Response Program	IV.C.2	Large Emission Events - Event Notification Deadlines	The EPA is also soliciting comment on the amount of time allowed for notifications following detection of a super-emitter emissions event. Clearly, timely notification of the event is essential to maximize the emission reduction potential from the event, but it is the EPA's understanding that each technology or remote measurement method experiences a lag between when a survey is conducted and when the data has been analyzed to demonstrate emissions were present. The EPA is soliciting comment on what deadline for notifications following detection survey is most advantageous and feasible given current data analysis requirements for remote measurement technologies and methods.

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Topic/Emissions Source	Preamble Section	Issue	Solicitations
Super-Emitter Response Program	IV.C.2	Notification Inclusion of Identification of Owners/Operators of Facilities - Additional Time Needed	Further, time will be required to properly identify the relevant owner or operator of the site. One factor is that ownership of sites can change frequently, or specific contacts may move into other roles or leave the company. Therefore, the EPA is soliciting comment on the amount of additional time that should be factored into the notification process to account for this identification step.
Super-Emitter Response Program	IV.C.2	Statutory Basis of Super-Emitter Program - Costs	Super-emitter emissions events could also be caused by fugitive emissions components that, if persistent, would be detected and repaired during the next fugitive monitoring survey; the super-emitter program would simply make the same repair earlier. Accordingly, there the EPA anticipates that there should be no additional cost associated with this work practice standard for the super-emitter emissions event affected facility. The EPA seeks comment on this issue.
Super-Emitter Response Program	IV.C.2	Statutory Basis of Super-Emitter Program - Costs	The cost effectiveness for responses to super-emitter emissions events will usually be substantially below this threshold, given that, by definition, super-emitter emissions events emit at least one ton of methane every nine hours, and over 18 tons in a week. For the reasons stated above, the EPA anticipates that requiring immediate corrective actions to resume normal operations to eliminate the super-emitter emission event could be achieved at a reasonable cost for this proposed affected/designated facility. The EPA seeks comment on this conclusion.
Timing of State Plan Submissions and Compliance Times	V.D	Public Engagement	[T]he EPA is proposing to include a requirement for states to undertake outreach and meaningful engagement with pertinent stakeholders as part of the state plan development process. The EPA solicits comment on how much, if any, time this additional engagement will take in the state plan development process.
Use of Optical Gas Imaging (OGI) in Leak Detection	VI.C	OGI Monitoring Requirements - Specifying Dwell Time to Account for Scene Complexity	[T]he EPA is soliciting comment on how dwell time could be based on the scene while still accounting for the differences in the complexity of scenes or ways to create bins for “simple” and “complex” scenes.
Use of Optical Gas Imaging (OGI) in Leak Detection	VI.C	OGI Monitoring Requirements - Ensuring OGI Camera Operators Survey a Scene is Adequate Without Specifying Dwell Time	The EPA is also soliciting comment on ways to similarly achieve the goal of ensuring that OGI camera operators survey a scene for an adequate amount of time to ensure there are no leaks from any components in the field of view without specifying a dwell time.
Use of Optical Gas Imaging (OGI) in Leak Detection	VI.C	OGI Camera Operators - Performance Audit Frequency	The EPA believes that it is important to verify the performance of all OGI camera operators, even the most experienced operators, on an ongoing basis. Nevertheless, the EPA is requesting comment on whether there should be a reduced performance audit frequency for certain OGI camera operators, and if so, who should qualify for a reduced frequency, what the reduced frequency should be, and the basis for the reduced frequency.
Use of Optical Gas Imaging (OGI) in Leak Detection	VI.C	OGI Surveys - Length of Survey Period	[T]he EPA has heard anecdotally that this may have more to do with the number of hours the OGI camera operator has surveyed during the day, such that it is more appropriate to limit the hours of surveying per day than it is to mandate rest breaks at a set frequency. The EPA is seeking any empirical data on the topic of the necessity of rest breaks when conducting OGI surveys or the link between operator performance and length of survey period.
Use of Optical Gas Imaging (OGI) in Leak Detection	VI.C	Commercial OGI Camera Configurations	The EPA does not currently have enough data or empirical evidence to provide a complete list of possible configurations for all the available commercial OGI cameras (taking into account future possible configurations) or a definitive ranking of which configurations are more stringent than other. The EPA is requesting comment on this topic and seeking any empirical data that could be used to create such a defined ranking of configurations.
Use of Optical Gas Imaging (OGI) in Leak Detection	VI.C	Adequate Delta-T - OGI Camera	The EPA is proposing that the monitoring plan must describe how the operator will ensure an adequate delta-T is present in order to view potential gaseous emissions, e.g., using a delta-T check function built into the features of the OGI camera or using a background temperature reading in the OGI camera field of view. [...] [A] commenter stated guidance should be added for operators who are using a background temperature reading in the OGI camera field of view. The EPA is requesting comment on ways that an OGI camera operator can ensure an adequate delta-T exists during monitoring surveys for cameras that do not have a built-in delta-T check function.

Table. Preamble Comment Solicitations/Requests

Topic/Emissions Source	Preamble Section	Issue	Solicitations
Use of Optical Gas Imaging (OGI) in Leak Detection	VI.C	Daily OGI Camera Demonstration Prior to Imaging to Determine Maximum Distance for Imaging	[O]ne commenter suggested that instead of having different operating envelopes for different situations and having to decide which envelope to use, the OGI camera operator should conduct a daily camera demonstration each day prior to imaging to determine the maximum distance at which the OGI camera operator should image for that day. The EPA believes that this type of determination would be more difficult and costly than creating an operating envelope, as it would require OGI camera operators to have necessary gas supplies on hand and take time to do this determination daily, or potentially multiple times a day. Nevertheless, the EPA is requesting comment on this suggestion, as well as how such a demonstration could be used if conditions on the site change throughout the day, at what point would the changed conditions necessitate repeating the demonstration, and how changes in the background in different areas of the site (such as to affect the delta-T) would be factored into such a demonstration.
Wells and Associated Operations	IV.F.3	Well Liquids Unloading Operations - Modification	The EPA is therefore requesting comment on operational scenarios where a well liquids unloading event could constitute a modification. Operational scenarios that may be considered a modification regarding well liquids unloading could include: (1) the first time, in the life of the well, that well liquids unloading occurs, (2) the first time, after fracturing or refracturing a well, that well liquids unloading occurs, (3) a change in the type or method of well liquids unloading, or (4) ongoing liquids unloading as part of a regular operational schedule. The EPA is requesting specific comment on whether these operational scenarios, or any additional ones, may or may not constitute a modification.
Wells and Associated Operations	IV.F.3	Well Liquids Unloading Operations - Applicability	[S]ince each well liquids unloading operation is conducted based on the site-specific circumstances at the time the operation is planned, the EPA is concerned that a well might fluctuate between falling within and out of the scope of the standards if the standards only applied to well liquids unloading operations that result in vented emissions. Therefore, for ease of implementation to the owner or operator, the EPA is proposing to apply the proposed standards to all well liquids unloading operations. The EPA is, however, specifically requesting further comment and any additional information regarding co-proposed option 2, where standards only apply to wells with well liquids unloading operations that result in vented emissions.

ATTACHMENT

Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review – Supplemental Proposal Preamble Outline

I. Executive Summary
A. Purpose of the Regulatory Action
B. Summary of the Major Provisions of this Regulatory Action
C. Costs and Benefits
II. General Information
A. Does this action apply to me?
B. How do I obtain a copy of this document, background information, other related information?
III. Purpose of This Regulatory Action
A. What is the purpose of this supplemental proposal?
B. What date defines a new, modified, or reconstructed source for purposes of the proposed NSPS OOOOb?
C. What date defines an existing source for purposes of the proposed EG OOOOc?
D. How will the proposed EG OOOOc impact sources already subject to NSPS KKK, NSPS OOOO, or NSPS OOOOa?
E. How does the EPA consider costs in this supplemental proposal?
F. Legal Basis for Rulemaking Scope
G. Inflation Reduction Act
IV. Summary and Rationale for Changes to the Proposed NSPS OOOOb and EG OOOOc
A. Fugitive Emissions from Well Sites, Centralized Production Facilities and Compressor Stations
    1. Fugitive Emissions at Well Sites and Centralized Production Facilities
    2. OGI Monitoring at Compressor Stations
    3. OGI Monitoring at Well Sites and Compressor Stations on the Alaska North Slope
B. Advanced Methane Detection Technologies
C. Super-Emitter Response Program
D. Pneumatic Controllers
E. Pneumatic Pumps
F. Wells and Associated Operations
    1. Affected and Designated Facility Definitions
    2. Associated Gas from Oil Wells
    3. Gas Well Liquids Unloading Operations
    4. Well Completions
G. Centrifugal Compressors
H. Combustion Control Devices
I. Reciprocating Compressors
J. Storage Vessels
K. Covers and Closed Vent Systems