MARCELLUS SHALE COALITION

July 30, 2025

Policy Office
Pennsylvania Department of Environmental Protection
16th Floor Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063

Re: Proposed State Plan for 40 CFR Part 60, Subpart OOOOc- Emissions Guidelines for Greenhouse Gas Emissions from Existing Crude Oil and Natural Gas Facilities. Submitted via eComment and ecomment@pa.gov

To Whom It May Concern:

The Marcellus Shale Coalition (MSC), a regional trade association with a national membership, appreciates the opportunity to submit comments for consideration on the proposed State Plan for Reducing Emissions of Methane and Other Pollution from Oil and Natural Gas Operations (40 CFR Part 60, Subpart OOOOc) (State Plan) to the Pennsylvania Department of Environmental Protection ("Department").

The MSC was formed in 2008 and is currently comprised of approximately 150 member companies who are fully committed to working with local, state and federal government officials and regulators to facilitate the development of the natural gas resources in the Marcellus, Utica and related geological formations. Our members represent many of the largest and most active companies in natural gas production, gathering, processing, transmission, and utilization in the country, as well as the supply chain companies, contractors, professional service firms, and the skilled trades who work with the industry.

Given the anticipated OOOOc compliance date extensions and reconsiderations of the underlying rulemaking by the U.S. Environmental Protection Agency (U.S. EPA), the MSC urges the Department to not move forward with implementation of the state plan until those revisions to the rule language are finalized. This coordination on timing with respect to the final State Plan is critical to streamlining efforts of the state and operators subject to the requirements. Additionally, the MSC has concerns regarding the Department approach to utilize a new General Permit to implement the State Plan and requests clarity on the administration and economic impacts of the proposed plan. Finally, in this comment letter, the MSC provides information on remaining useful life and other factors (RULOF), as requested in the proposed plan, and offers considerations for streamlining implementation of the OOOOc requirements.

Thank you for considering our concerns and feedback detailed in the comments below.

Adopt federal rule by reference due to pending reconsiderations

The MSC supports the incorporation of the federal requirements by reference due to pending revisions to the federal rule and emissions guidelines (EG) which were announced on March 12, 2025. In addition to anticipated reconsideration to 40 CFR 60 Subpart OOOOb and EG OOOOc, an interim final rule with compliance extensions was recently signed and extend compliance dates (including those for submittal

of state plans) by 18 months. As interim final rules typically become effective upon publication in the Federal Register (FR) or 30 days after publication, U.S. EPA has often followed interim final rules with a final rule that considers and responds to comments submitted on the interim rule. U.S. EPA's interim final rule was signed July 28, 2025, and will extend the current March 9, 2026 deadline for the Department to submit the Proposed State Plan to U.S. EPA under 40 C.F.R. § 60.5362c by 540 days from publication in the Federal Register. The MSC urges the Department to delay further action on the state plan until the OOOOc extension of deadlines are finalized to avoid unintentional inconsistencies between the federal and state requirements and to maximize the use of resources by avoiding rule, permit-by-rule, or general permit revisions. The MSC also urges the Department to reopen this comment period after U.S. EPA's rule is finalized to allow for additional comment.

Alternatives to the General Permit Approach

As the Department notes in the draft State Plan, U.S. EPA's Emission Guidelines for Existing Sources, including the Model Rule, are automatically incorporated by reference into the Department's regulations under 25 Pa. Code Chapter 122. The Model Rule contains detailed compliance requirements including submission of a compliance plan and demonstration of continuing compliance which can be enforced without the requirement to establish new rulemaking or obtain permits. A general permit (GP) that simply regurgitates these detailed and already incorporated provisions and requires a separate application in addition to the submission of a compliance plan is unnecessary, overly complex, confusing and runs contrary to the intended purpose of a GP.

Due to the significant resources that would be required of companies to apply for general permits and the Department to process thousands of applications, the MSC has concerns with the general permit approach and believes the implementation is infeasible without significant addition of resources within the Department and operating companies. Therefore, the MSC recommends other options to implement the rule requirements as detailed below while taking into consideration the substantive comments provided herein on RULOF and Legally and Practically Enforceable Limits (LPELs) which may require separate rulemaking or a permitting approach.

1. *Incorporation into Existing Permits:*
   The MSC requests that the Department proceed with the most streamlined approach, which is to maintain the incorporation of the rule by reference in the state implementation plan and enforce the Model Rule via 25 Pa. Code Chapter 122. The Department should follow the same procedure it did with 25 Pa. Code Chapter 129.121-140 Standards for Sources, also termed the Existing Source Rule (ESR). When asked by the Independent Regulatory Review Commission (IRRC) how these new regulations would be incorporated into existing permits the Department said *"The incorporation into an existing permit will follow the requirements of 25 Pa. Code § 127.463. In the meantime, the owners or operators with a GP-5 or GP-5A must demonstrate that they are complying with the requirements of this final-form rulemaking by submitting the proper reports and maintaining the required records. Where duplication is found in the recordkeeping and reporting requirement, the Department would accept the more detailed (stringent) report or record with a statement that the information therein satisfies both this final-form rulemaking and the general permit requirements."* (Comment Response Document, EQB regulation #7-544, Response 186, p. 82). The same procedure can be followed regarding the OOOOc requirements.

   Since the Model Rule is already part of the Department's regulations under Chapter 122 and since the Model Rule contains detailed requirements for recordkeeping, reporting and for demonstrating

compliance there is no need to create a new permit or rule. All those requirements are enforceable pursuant to the Air Pollution Control Act.

2. *Rulemaking by Reference:*
   Given the previous point, no further action is needed to incorporate and enforce the Model Rule requirements, with the exception of RULOF and LPEL considerations as discussed elsewhere in this letter. However, if the Department chooses to take action in addition to Comment 1., rulemaking by reference would be a more efficient approach than permitting. This would ensure that consistency with Federal regulations is upheld, and that industry and agency resources are not spent unnecessarily on avoidable permitting efforts affecting thousands of sites.

   One mechanism to incorporate the model rule through rulemaking would be for the state to revise the 25 Pa. Code Chapter 129.121-140 Standards for Sources to specifically incorporate the Model Rule requirements by reference consistent with Chapter 122.3. Alternatively, a separate rulemaking for the OOOOc methane provisions would be a suitable approach to incorporate the Model Rule by reference without requiring operators to obtain new or modified permits.

3. *Permit by Rule:*
   Should the options above not be suitable for the Department, the MSC stresses that it would be far more efficient to establish a permit-by-rule (PBR) given the comprehensive nature of the Model Rule. Facilities that submit a compliance plan consistent with the model rule would automatically be authorized to operate under the PBR without needing an additional application. Minimal review, if any, of compliance plans would be required and the resources needed for such reviews would be significantly less than the review process for a general permit application.

These approaches would potentially eliminate complications including duplicative reporting, multiple permits per facility, the Department being inundated with permit applications, and strain on operator and consultant resources to prepare such permit applications.

<u>Request for Clarifications on GP Approach:</u>
If the Department continues with the general permit approach, the MSC requests clarification on certain aspects of the State Plan to allow operators to plan accordingly. The items for which additional clarification is requested are listed below:

- Will the Department add additional permitting staff to facilitate the timely issuance, as described in the PA Permit Decision Guarantee and PAyback Program, of thousands of general permits that would be required?
- What is the expected additional full-time equivalent (FTE) needed within the Department to support execution of the plan?
- What will the application requirements, fees, and process entail?
- Does the Department intend to issue GPs by affected facility, site, or legal entity?
- How will the Department handle facilities with state-only operating permits?

Companies should be given the opportunity to prepare additional resources to meet the State Plan requirements and are formally requesting the opportunity to review and comment on the draft General Permit and supporting documents, including the associated application forms and requirements.

Streamlining of Compliance Reports

The MSC encourages the streamlining of reporting requirements. For example, 40 CFR Part 60, Subpart OOOOc and 25 Pa. Code Chapter 129.121-140 Standards for Sources (Control of VOC Emissions from Unconventional and Conventional Oil and Natural Gas Sources) regulate common facilities. Therefore, any affected facility that meets any of the reporting criteria in the State Plan for 40 CFR Part 60, Subpart OOOOc should meet the reporting requirements of 25 Pa. Code Chapter 129.121-140. No further reporting requirements should apply under 25 Pa. Code Chapter 129.121-140 if the reporting requirements under OOOOc are met.

Optional General Permit for LPELs

40 CFR Part 60.5386c (e)(2) allows for the use of a legally and practically enforceable limit (LPEL) to be used for determining applicability as a storage tank affected facility. This limit can be included as a permit requirement or in other requirements established under federal, state, local, or tribal authority. MSC urges the creation of an individual General Permit for the sole purpose of obtaining a LPEL for the reasons outlined below.

The LPEL General Permit can be in force prior to the issuing of the general permit that coincides with the effective date of OOOOc requirements in 2029. This allows for use of the LPEL for compliance with OOOOa and OOOOb which are already in effect. The LPEL permit also allows companies the flexibility to clearly choose if they accept the limitations of an LPEL, while allowing the Department to more easily track which facilities are subject to LPELs. The LPEL permit can streamline the issuance of LPELs as LPELs must be in effect prior to production beginning. MSC recommends prioritization of these time-critical permits for approval.

Requests for Clarification on Specific Sources

1. *Storage Vessel Designated Facility:*

A tank battery that has the potential for methane emissions below 20 tons per year (tpy) is not a storage vessel designated facility under 40 CFR §60.5386c, provided adequate records are maintained and potential methane emissions remain below 20 tpy. Under 40 CFR §60.5386c(e)(2), the determination may consider requirements under a legally and practicably enforceable limit in an operating permit or other requirement established under a Federal, state, or local authority, provided six specified elements are met. A number of sites have enclosed combustors and other control devices that are currently operating under different requirements (GP-5A, Existing source rule, etc.). These storage vessels may contain produced water or dual product and have been identified as being subject to the requirements of 25 PA Code, §129.123; a closed vent system and reduction of VOC emission by at least 95%. The Requirements §129.121-§ 129.140 are currently part of Pennsylvania's state implementation plan (see 40 CFR, §52.2020(c)).

Additionally, §129.123(a)(2)(ii) allows for the potential emissions determination to consider legally and practically enforceable limit established in an operating permit or plan approval approved by the Department. Hence, we request confirmation that a control device (e.g. enclosed combustor) that has been installed to comply with the regulations for controlling VOC emissions from Unconventional Oil

and Natural Gas Sources, codified under 25 PA Code, Chapters 121 and 129, may be used in determining the potential emissions for storage vessels under the proposed plan.

2. *Super-Emitter Events:*

The MSC requests confirmation that the proposed State Plan requires that reports for super-emitter events as defined under 40 CFR §60.5388c need only be submitted to the U.S. EPA.

3. *Gas Well Liquid Unloading Operations:*

The MSC requests confirmation that a best management practice plan that has been developed and complies with 40 CFR, §60.5376b(c) is equivalent to the requirements of §60.5390c(c).

Remaining Useful Life and Other Factors

When implementing a state plan under Section 111(d) of the Clean Air Act, a state may apply standards less stringent than the emission guidelines by taking into consideration the remaining useful life (RULOF) of the regulated facilities (or classes of regulated facilities) in their state plans consistent with the requirements of 40 C.F.R. §60.24a. In 2023, U.S. EPA promulgated a revision to this regulation that provides a process for states' consideration of RULOF in applying a standard of performance. (88 Fed. Reg. 80,480). The state must demonstrate to U.S. EPA that each such facility or class of facilities for which a state intends to apply a less stringent requirement or longer compliance schedule cannot reasonably achieve the degree of emission limitation determined by U.S. EPA due to (1) unreasonable cost of control due to facility age, location, or basic process design, (2) physical impossibility or technical infeasibility of installing control equipment, or (3) other circumstances specific to the facility.

The state must also demonstrate that there are fundamental differences between these facilities and the information U.S. EPA considered in determining the emission limitations achievable in the emission guidelines. If the state applies a less stringent standards based on an operating condition within the designated facility's control (e.g. remaining useful life or restricted capacity), the state's plan must also include requirements for the implementation and enforcement of such operating condition(s), such as requirements for monitoring, reporting, and recordkeeping. In its 2023 rule, U.S. EPA noted that there were two ongoing emissions guidelines rulemakings (one of which was OOOOc) and those rulemakings would address "address large, complex, and highly diverse source categories." Based on comments received in those rulemakings, U.S. EPA suggested that RULOF may play a larger role in emission guideline implementation than it has in the past. 88 Fed. Reg. at 80, 512.

In its proposed state plan, the Department has requested information regarding RULOF. The MSC would request that the Department allow additional opportunity for comment on any proposed addition to the state plan regarding RULOF such that industry can provide any additional information to support the Department's request for approval of the plan by U.S. EPA. While it is the MSC's understanding that a draft of the general permit will be made available for comment, such a draft would likely not be available for comment until after the State Plan is submitted to U.S. EPA.

West Virginia Division of Air Quality's draft implementation rule (https://dep.wv.gov/daq/CandE/Documents/45CSR45%20-%20DRAFT.pdf) includes an allowance under

45 CSR 45-6 for owners and operators to apply for an alternative standard for performance and outlines the requirements for a demonstration. The MSC requests similar language in the Pennsylvania State Plan.

1. Process Controllers:

West Virginia Division of Air Quality's draft implementation rule includes an allowance under 45 CSR 45-12.7 for sites without accessibility to power if compliant with RULOF requirements and includes several compliance options. The MSC requests similar language in Pennsylvania's State Plan and provides further justification for the use of RULOF for process controllers below.

Nitrogen Study

A study was undertaken to understand the estimates of actual emissions from pneumatic devices in operation at production facilities by assessing those facilities that have retrofitted existing devices to use nitrogen as the motive gas. Nitrogen usage is metered to track when tanks need to be refilled and indicates real-world, long-term emissions from devices, including the subset of malfunctioning devices. This approach mirrors method one of 40 CFR, 98.233(a)(1) (calculating GHG emissions) and is conservative in that a natural gas-powered malfunctioning device can be caught during routine OGI inspections, as well as through alternative methane detection technologies that many companies are deploying, such as continuous monitors or aerial flyovers. Audio, visual, or olfactory (AVO) inspections and evaluation of individual site data for a spike in nitrogen usage are the only ways to identify a malfunctioning nitrogen powered device.

The nitrogen usage of three operators was evaluated for a data set of 1,936 devices at 205 sites. Usage was annualized and compared to factors used in the best system of emissions reduction (BSER) analysis by the U.S. EPA in the Technical Support Documents for OOOOb (https://www.regulations.gov/document/EPA-HQ-OAR-2021-0317-3989). The results indicate that actual emissions are only about 30% of the total emissions based on U.S. EPA's calculation (50 mcf vs 183 mcf). This greatly affects the cost/benefit analysis for zero emission device requirements, especially at sites classified as small production.

From this data, a more appropriate emission factor to apply to intermittent devices is 2.92 scf/hr versus the U.S. EPA factors of 8.8 scf/hr from the 2024 Subpart W revisions or 11.1 scf/hr that was used in the U.S. EPA's BSER analysis. This factor is still conservative in that 191 of the 1,936 devices included in the analysis were classified as continuous low bleed, which tends to have a higher bleed rate and would skew the emission factor higher. Also, this emission factor includes emissions from events that are accounted separately in Subpart W, such as stuck dump valves, which also skews the emission factor higher.

Use of Inspection Program for Intermittent Controllers

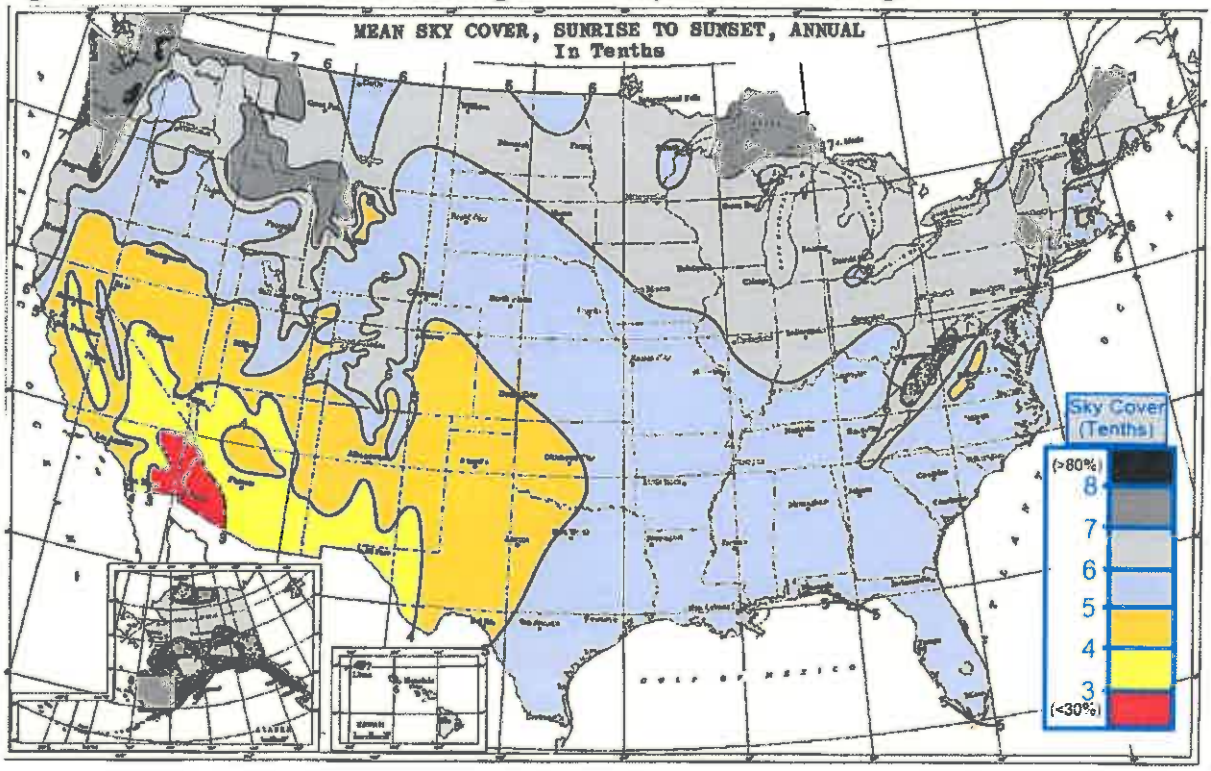
In its BSER analysis, U.S. EPA did not adequately account for the emissions reductions available from use of an inspection program for intermittent controllers. When a company chooses to undertake LDAR surveys following Method 3 of Subpart W, the emission rate for properly operating devices drops to 0.3 scf/hr. In the original BSER analysis, U.S. EPA calculated that inspection programs would result in only 68.4% reduction in emissions. However, when comparing the function device rate to the general

factors, the actual reduction increases to 96.6% using the U.S. EPA factors of 8.8 scf/hr and 90% using the 2.92 scf/hr derived from the nitrogen study. This data shows that inspections programs offer a low cost, high yield emission reduction opportunity. U.S. EPA has affirmed the value of inspections by allowing sites in Alaska to comply with process controller requirements through an intermittent inspection program.

Solar Devices Difficulties

In the U.S. EPA BSER analysis, the use of solar devices is the most economical option for sites without electricity that are held to a zero-emission standard. Solar devices are not suitable for every device retrofit, are targeted for theft and vandalism, and are easily damaged in weather events. The state of Pennsylvania also receives a significant amount of cloud coverage as compared to the rest of the country, as depicted in the figure below from the National Weather Service, which affects solar performance. It is unreasonable to assume that all devices can be retrofitted to solar without planning for a backup option to actuate the devices.

Figure 1. National Weather Service Average Annual Daytime Cloud Coverage



Source: https://www.weather.gov/ctp/HowCloudyIsPA

EPA's BSER Cost Analysis Issues

There are several issues that skew the U.S. EPA's BSER cost analysis that, when corrected, affect what mitigation options are cost effective:

- The U.S. EPA included a high bleed controller at every model plant. High bleed controllers have been disallowed since OOOO went into effect in 2012. Also, the requirements of 25 PA Code 129.124 and 129.134 now limit the natural gas bleed rate to six scfh for continuous bleed units.

- Assuming the U.S. EPA's generous lifespan of 10 years, any high bleed controllers that were in use prior to OOOO have exceeded their lifecycle and would have been replaced with an approved option. Consequently, it is inappropriate to assume a high bleed controller exists at every site.
- The U.S. EPA also assumes that at least one low bleed controller exists at every site. According to the nitrogen study referenced above, only 23% of facilities actually utilize a low bleed controller. Therefore, it is inappropriate to assume every facility utilizes a low bleed controller.
- As discussed above, U.S. EPA utilized an intermittent vent factor of 11.1 scf/hr. This conflicts with the 2024 Subpart W factor of 8.8 scf/hr, the 2024 Subpart W factor for properly operating controllers of 0.3 scf/hr, and the nitrogen study result of 2.9 scf/hr.

In correcting these deficiencies in the U.S. EPA BSER analysis, the cost effectiveness of many technologies is called into question. In the original BSER analysis, no option exceeded $5,000 when taking the annual cost of natural gas saved into account. Therefore, it is reasonable to assume that $5,000 is the threshold for cost effectiveness. As shown in Table 1 below, utilizing the conservative factor of 2.9 scf/hr from the nitrogen study, a facility needs to have at least 5 intermittent controllers, or have total emissions above 2.2 tpy, to achieve a cost effectiveness below $5,000 for use of a generator for electric controllers. Solar is not a feasible option to consider for the reasons discussed above.

Table 1. Summary of methane emissions for a site with five intermittent controllers and the cost effectiveness associated with zero emission options.

*Model Plant- Sites without Electricity	Baseline Emissions - Per Facility (tpy) Methane	Emissions Reduction - Per Facility (tpy) Methane	Annual Cost ($/yr)	Cost Effectiveness ($/ton Methane)
Production site with 5 intermittent controllers	2.192	2.192		
Electric controllers - Solar	--	--	$2,449	$1,117
Production site with 5 intermittent controllers powered by nitrogen	--	--	$6,168	$2,814
Electric controllers - Generator	--	--	$10,591	$4,832
Compressed air - Generator	--	--	$31,528	$14,384

**Generally, the cost for providing utility power from the grid ranges between $30,000 and $60,000.*

Marginal Wells

The capital investment required for zero emission controllers is infeasible for most marginal wells. For example, an off-grid site that produces 10 MSCFD at a gas price of $2.50/mcf yields $9,125/year in gross revenue. Based on U.S. EPA's estimates, the least expensive capital investment for zero emission controllers would be solar at $22,653. This is not economically feasible for marginal wells.

Control Devices

Control devices have long been recognized as a reasonable solution to reduce emissions. Control devices offer an economic alternative to significantly reduce emissions from process controllers,

especially for facilities that already have control devices installed for other source requirements. Verification that the control device can adequately manage the emissions can be accomplished through the requirement to have an engineer perform a closed vent system analysis. U.S. EPA has affirmed the value of control devices by allowing sites in Alaska to comply with process controller requirement through routed emissions to control.

Reliability

U.S. EPA's BSER analysis did not account for reliability issues. Grid power can be periodically lost, and sites with generators may have generator downtime related to breakdowns or general maintenance. Battery backup for solar powered devices is expensive. It is important to allow for an economically viable backup solution should the primary mode of power be unavailable.

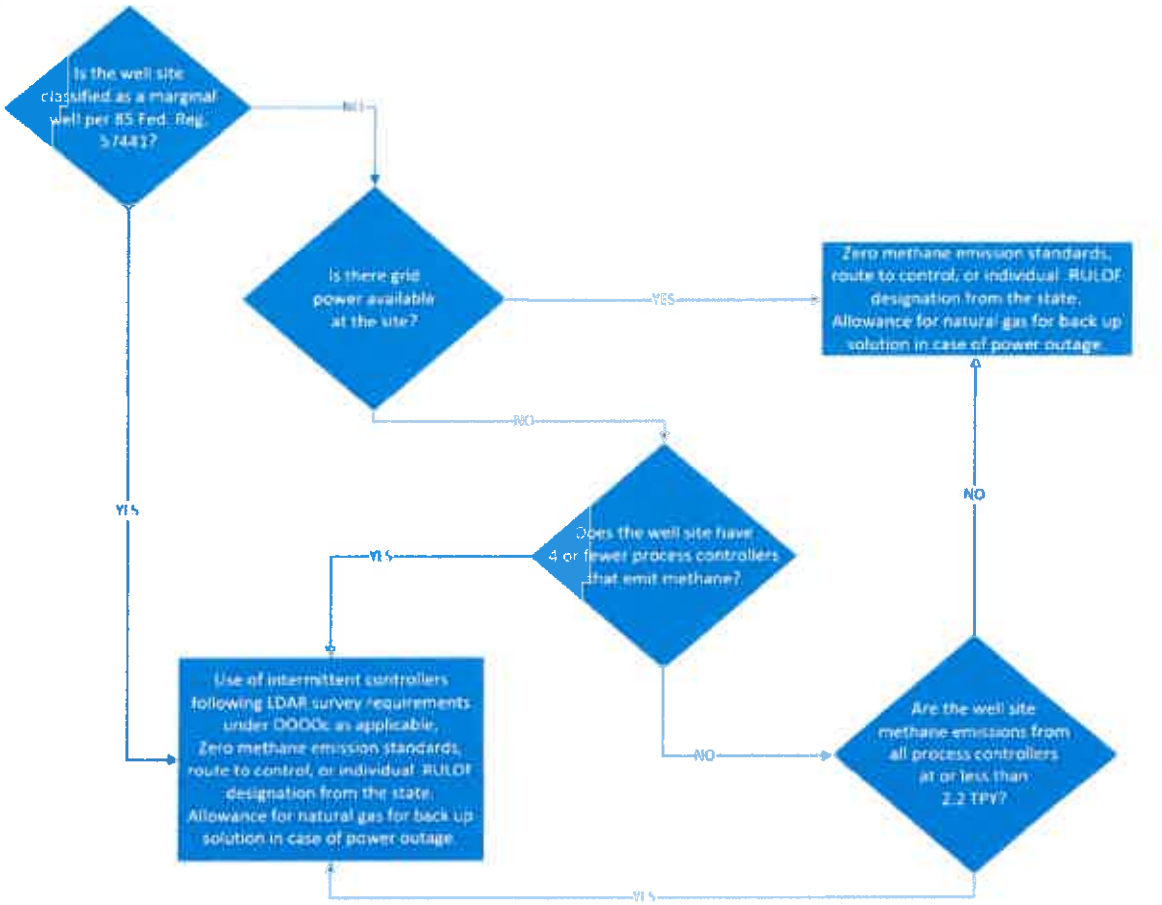
Recommendations

Based on the information presented above, the MSC requests RULOF provisions for marginal wells and sites with no accessibility to power that have either four or fewer methane-emitting process controllers or cumulative emissions less than 2.2 TPY from all process controllers on site. For such scenarios, the MSC requests increased flexibility under RULOF by allowing the use of intermittent vent process controllers with an LDAR survey requirement consistent with the applicable OOOOc standards, the ability to route process controller emissions to control devices, and an allowance for the use of natural gas as a backup solution during power outages.

In addition, RULOF provisions should allow process controller emissions to be routed to control devices and natural gas to be used as a backup solution during power outages for all process controller affected facilities.

The MSC urges the Department to consider the decision tree in Figure 2 to determine what requirements apply to process controllers.

Figure 2. Decision tree to determine applicable requirements for site with process controllers.



2. Closed Vent Systems and Rod Packing:

The potential capital investment to comply with NSPS OOOOc requirements for reciprocating compressors and/or storage vessels may be unreasonable for older sites with limited economic return during their remaining useful life of 10 years or less.

- *Rod Packing at a reciprocating compressor designated facility located at a centralized production facility:* Under NSPS OOOOc and OOOOb, an owner or operator must repair or replace the rod packing to meet required volumetric emission thresholds, or, alternatively, route rod packing emissions to the process or a control device. The estimated cost of a rod packing replacement is $20,000 per unit and could be required as frequently as annually. Alternatively, routing rod packing emissions to the process or a control device would require a closed vent system (CVS), such as a ZEVAC system. For a typical designated facility, at least two ZEVAC systems would be required at a cost of approximately $120,000 each, plus an additional $50,000 in piping and other general equipment cost, amounting to a total of $290,000.

- *Close Vent System (CVS) associated with a storage vessel designated facility:* Upgrades to existing CVSs to meet NSPS OOOOc requirements can range from modifications to piping or the thief hatches of the storage vessels to adding a flare. The estimated cost associated with such upgrades range from $50,000-$200,000 per site depending on the complexity of the updates involved.

Considering these cost compared to the economic return of facilities with 10 years remaining useful life or less, we recommend a recordkeeping requirement to account for emissions in the annual emissions inventory report in lieu of installing upgrades to comply with NSPS OOOOc requirements.

3. Isolation and Blowdown Valve Replacements:

Fugitive emissions from isolation and blowdown valves at compressor stations have historically been subject to leak detection and repair (LDAR) standards under NSPS OOOOa/b. However, for the purposes of OOOOc, requiring repair for any visible leak regardless of size is unnecessarily stringent for existing sources. For example, when an open-ended line (OEL) leak is detected, where the leak is affiliated with a compressor isolation and blowdown valve, and determined that a simple repair will not resolve the leak, the scope of replacement can be upwards of $100,000 and this includes material, contractor cost, and downtime.

Many facilities have multiple manifolded isolation valves, and when an isolation valve, or multiple isolation valves have through-valve leakage, the leak is observed at a single location, via an open-ended line. Identifying the specific valve that is leaking can be technically challenging and not an exact science. Once the potential valve(s) are identified, to address all visible emissions from through-valve leakage, extensive maintenance activity may be required. Most of these valves have remaining useful life considerations and contribute only nominal emissions, making premature replacement both economically and environmentally inefficient as shown in the tables below.

Typical leak emission factors (EFs) for OELs in the different sectors, as utilized per U.S. EPA's GHG Reporting Program - Subpart W, and annual emissions estimated under the hypothetical that leaking occurred daily throughout the year, are shown in the table below. However, the potential for leaking on a daily basis depends on utilization and the emission rates in Table 1 are conservative as daily leaking is not anticipated on a compressor isolation valves. For these leaks on compressor isolation valves, if the leak is observed during a compressor shutdown, while the isolation valves are closed (i.e., through-valve leakage), it is only during compressor shutdowns that the leakage will be occurring.

Table 1. Potential emissions for OEL leaks using Subpart W emission factors (EFs).

Subpart W - OEL Leak EFs	Gas vented/year (scf/hr)	CH4 emissions (tpy)	CO2 Emissions (tpy)	CO2e Emissions (tpy)
OEL Leak (G&B)	10	1.81	0.0	50.56
OEL Leak (Transmission Compression)	28.2	5.09	0.0	142.57
OEL Leak (Storage)	4.08	0.74	0.0	20.63

An OEL leak discovered during LDAR, such as on isolation valves, the emissions seen at the OEL may be through-valve leakage from multiple manifolded valves which leads to challenging repairs. When

compared to potential estimated venting emissions that would be needed to isolate the valve for repair, shown in the table below, the costly replacement of these values is not warranted.

Table 2. Potential emissions from shutdown to isolate valve for repair.

Venting Type (Estimates)	Gas Volume* (scf/event)	CH4 emissions (tpy)	CO2 Emissions (tpy)	CO2e Emissions (tpy)
Compressor Blowdown	5,000	0.10	0.0	2.89
Station Shutdowns	67,000	1.38	0.0	38.67

**The gas volume represented is an estimation and actual volumes may vary based on facility.*

The MSC recommends allowing for a materiality threshold and considering remaining service life. For example, if the emissions associated with an outage to repair or replace the leaking valve is greater than the anticipated emissions throughout the remaining service life, then a recordkeeping requirement should replace the requirement to repair or replace the valve.

Conclusion

Thank you for your consideration of these comments. Should you desire any additional information or clarification, please do not hesitate to contact me.

Sincerely,

Jim Welty, President
Marcellus Shale Coalition