July 7, 2023

U.S. Environmental Protection Agency
EPA Docket Center
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, DC 20460

Submitted electronically to the Federal e-Rulemaking Portal (www.regulations.gov)

RE: **Comments on EPA's Proposed New Source Performance Standards for the Synthetic Organic Chemical Manufacturing Industry and National Emission Standards for Hazardous Air Pollutants for the Synthetic Organic Chemical Manufacturing Industry and Group I & II Polymers and Resins Industry. Docket ID No. EPA-HQ-OAR-2022-0730, 88 Fed. Reg. 25,080 (April 25, 2023).**

1. INTRODUCTION

The American Chemistry Council (ACC), The American Fuel & Petrochemical Manufacturers (AFPM), The U.S. Tire Manufacturers Association (USTMA), and The Vinyl Institute (the associations**)** respectfully submit these comments on the U.S. Environmental Protection Agency's ("EPA") proposed New Source Performance Standards for the Synthetic Organic Chemical Manufacturing Industry and National Emission Standards for Hazardous Air Pollutants for the Synthetic Organic Chemical Manufacturing Industry and Group I & II Polymers and Resins.

ACC represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care®, common sense advocacy designed to address major public policy issues, and health and environmental research and product testing.

AFPM is a national trade association representing nearly all U.S. refining and petrochemical capacity, as well as midstream industries. In addition to actively pursuing emissions reductions from their operations, our members are committed to sustainably manufacturing and delivering affordable and reliable fuels powering our transportation needs and chemical building blocks integral to millions of products that make modern life possible.

USTMA is the national trade association for tire manufacturers that produce tires in the U.S. Our 12 member companies operate 57 tire-related manufacturing facilities in 17 states, are responsible for more than 291,000 jobs, and have an annual economic footprint of $170.6 billion in the United States. USTMA advances a sustainable tire manufacturing industry through a commitment to science-based public policy advocacy. Our member company tires make mobility possible. USTMA members are committed to continuous improvement of the performance of our products, worker and consumer safety and environmental stewardship.

The Vinyl Institute, Inc., ("VI") founded in 1982, is a U.S. trade association representing the leading manufacturers of vinyl resins, vinyl chloride monomer, vinyl additives and modifiers, and vinyl materials. VI's HON MACT Working Group includes the following VI members: Formosa Plastics Corporation, U.S.A.; Occidental Chemical Corporation/Oxy Vinyls, LP; Shintech Inc.; and Westlake Chemical Corporation.

Our association members operate across the country in compliance with existing local, state, and federal statutory requirements. The environmental impacts of our member facilities' operations are also assessed according to permit conditions approved by state regulators and administered under the Clean Air Act (CAA), Clean Water Act (CWA), Resource Conservation and Recovery Act (RCRA), and others regulatory frameworks. Our members also have a longstanding commitment to transparently communicating with community residents about processes and products through the use of important tools like Community Advisory Panels, which help facilities build relationships with members of their communities, share information about operations, identify any community concerns, and work with community stakeholders to try to resolve them.

Overall, EPA's proposed rulemaking represents a significant and precedential effort that will introduce many changes to an already complicated suite of CAA regulations. Indeed, EPA's proposed rulemaking represents six separate rulemakings in one and is a complex and far-reaching Agency initiative that will have significant implications for several groups of chemical manufacturing entities, including potential restrictions that may force numerous facilities offline and create potential supply chain disruptions for critical products, all with limited or no meaningful benefit for public health or the environment. To further complicate matters, EPA has elected to conduct a voluntary second risk analysis and assessment for the source categories, which not only amounts to an extraneous discretionary decision likely inconsistent with its statutory authority, but also one that is deeply flawed and artificially inflates risks due to EPA's failure to account for emissions updates or improvements from facilities.

Unfortunately, EPA's compressed timeline to develop a rulemaking of this sweeping scope along with the short public comment period have only served to compound the complexity created by these proposed requirements and stifle the ability to understand their impact and provide meaningful and complete comments. EPA's approach to the proposed requirements also at times unnecessarily complicates the underlying regulatory framework, which is already intricate and rife with cross-references. For example, throughout the proposed rulemaking, EPA inserts new language into an existing section stating that the full paragraph no longer applies after a certain date; EPA could easily avoid this unnecessary complication by inserting language at the beginning of a section that provides a list of the requirements within the section that would not apply after a certain date. EPA must also ensure that its references are correct so readers can ascertain requirements. For example, §63.100(k)(10)(i) refers to a §63.107(h)(9)(ii) that does not exist. For example, there are also two subsections (k) at §63.181. If these difficulties persist in the final rule, EPA risks creating avoidable confusion and potential delays to compliance planning. EPA can avoid many of these issues in the final rulemaking if it ensures that the rulemakings meets its mandate for plain writing such that affected facilities can understand precisely which existing requirements will sunset and what new ones will replace them.[1]

While we support updating emissions standards in a technically feasible manner, we have substantial with several aspects of EPA's rulemaking for which revisions, further clarification, or potential withdrawal would be beneficial.

Many of our members have chemical production operations subject to New Source Performance Standards (NSPS) that apply to the Synthetic Chemical Manufacturing Industry (SOCMI). Our members also have operations subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) that apply to the SOCMI (the Hazardous Organic NEHSAP or "HON") and Group I and II Polymers and Resins Industries (P&R I and P&R II).

EPA's proposal encompasses multiple rules under both 40 CFR Part 60 and Part 63 and includes new and revised provisions that apply to a variety of emissions sources and operations. We support several of the changes and additions as proposed by EPA. For example, EPA proposes several changes related to removing exemptions for startup, shutdown, and malfunction. As part of removing these provisions, EPA proposes to include measures such as maintenance vent provisions and work practice standards for pressure relief devices (PRDs) that have the potential to discharge to the atmosphere. We support these provisions and provide additional technical detail and recommendations to further refine the final rule.

[1] https://www.epa.gov/web-policies-and-procedures/plain-writing.

The proposal also contains significant additional control provisions for ethylene oxide (EO) emissions from process vents, storage vessels, heat exchange systems, wastewater, and equipment leaks. Some of the proposed provisions are consistent with those that the Agency finalized as part of their 2020 risk and technology review (RTR) for the National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing[2] rule (referred to as the MON); however, both this proposed rule and the MON contain provisions that far exceed existing requirements in other NESHAPs and for other pollutants covered by those rules. As described in detail below, we are particularly concerned not only with EPA's decision to continue to use the IRIS value for EO but that EPA has chosen an unprecedented path in conducting an additional residual risk review to address emissions of EO rather than using its clear statutory authority to conduct a technology review. Relatedly, we are concerned that the Agency has proposed broadly applicable requirements without consideration of the substantial costs imposed on facilities that do not pose unacceptable risk, when instead the Agency could have taken a more targeted and less costly approach through other means at its disposal. As described below, we urge the Agency to withdraw these risk-based portions of the proposal and repropose under the technology review provisions. Such a proposal could achieve meaningful reductions of EO, and we stand ready to engage with the Agency on options that achieve such outcomes while providing feasible reductions and protecting the supply chain.

In addition, we have significant concerns regarding EPA's proposed fenceline monitoring program that would target an array of analytes across a multitude of facilities and operations (including those not subject to any of the regulations that EPA is proposing to revise). As described further in our comments below, the applicability of the requirements is ambiguous, the costs associated with implementing the requirements has not been properly considered, and the feasibility of implementing the monitoring programs in the prescribed timeframe is questionable at best. Furthermore, the proposed fenceline monitoring requirements appear to impose emissions standards on operations not included in the source category to which these proposed rules apply.

As mentioned above, our associations are generally concerned with EPA's process throughout the development of this action. As described in ACC's request for an extension, the immediate rule combined six actions into one, is based on unprecedented legal interpretations, and has taken comment on requirements never before proposed by the Agency. Moreover, the modeling files were complex and were in a number of instances difficult to understand. Much of this complexity is driven by the Agency's voluntary decision to undertake new risk reviews. While we appreciate that the Agency provided a short extension, it was unfortunately not sufficient given the complexity of the rule or consistent with the length of comment provided in other actions, thus limiting public input. The associations recognize EPA's obligation to complete the rulemaking on

[2] 85 Fed. Reg. 49084.

a timeline under a signed consent decree. However, that factor is of no consequence to this issue since EPA could have focused on proposing requirements necessary to meet that deadline rather than on provisions that for which it has no statutory mandate (risk) or questionable authority /support (e.g., fenceline monitoring requirements that reach beyond the source category).

The associations offer the below comments on several aspects of EPA's proposed rule revisions including specific concerns and recommendations designed to support and improve EPA's proposed requirements. The following points highlight key elements of our detailed comments:

- EPA's approach to addressing emissions of EO is inconsistent with the statute and the Agency should follow the technical review process while considering costs and options available to subcategorize and/or target emissions standards.
- EPA should await the outcome of litigation in the D.C. Circuit prior to proceeding to use the Integrated Risk Information System (IRIS) value for any regulatory purposes. Further, regardless of outcome, EPA should address the numerous issues that have to date been raised but dismissed out of hand by the Agency.
- If EPA decides to proceed to address risk, we urge the Agency to address unnecessarily conservative emission inputs to its risk model by revising flare release characteristics, incorporating company input on emissions releases, and excluding short-term/infrequent release events for chronic exposures.
- The proposed flaring capacity limit for EO is unnecessary when appropriate flare release characteristics are included in the risk model inputs. The flare cap should either be removed or increased in the final rule.
- The proposed thresholds for "in ethylene oxide service" for process vents, storage vessels, wastewater, heat exchange system, and equipment are arbitrary and unjustified. If EPA proceeds to address risk, the thresholds should be revised such that they are commensurate with the risk associated with the given concentration and mass emissions rate levels.
- EPA has not properly considered the impacts associated with eliminating delay of repair (DOR) provisions for equipment and heat exchange systems in EO service. Eliminating delay will require more frequent shutdowns to repair minor leaks, contributing to additional emissions of EO. Furthermore, more frequent shutdowns will require additional purging of equipment and equipment openings impacting facilities ability to comply with the proposed EO flare capacity limit, the maintenance vent provisions, and the proposed fenceline monitoring action levels.
- EPA has exceeded its CAA statutory authority in proposing fenceline monitoring requirements, which do not represent an update in technology for the purposes of CAA Section 112(d)(6) and are not cost-justified. As such, they should not be finalized because as proposed they represent an additional emissions standard for which EPA has not

considered costs under a technology review framework. The proposed requirements also impose emissions standards on operations beyond the source category.

- If EPA proceeds to finalize fenceline monitoring requirements, the Agency must provide adequate time to establish monitoring programs. The Agency must also provide further transparency with regards to how the action levels were developed, and revise those action levels, particularly for EO, such that they are attainable by facilities when in compliance with the other proposed requirements in this rulemaking.
- EPA's proposed revisions to the requirements for heat exchange systems based on the technology review are unreasonable given that they are not cost-effective. As such, the proposed revisions should not be made final.
- The removal of the total resource effectiveness concept from the NESHAPs and NSPS is unjustified for the reasons provided herein. EPA should retain the concept in the final rule. Additionally, EPA's proposal to revise the Group 1/Group 2 designation for process vents because it is cost-effective inappropriately relies on emissions reductions already achieved by the industry. EPA should not finalize the proposed changes to the Group 1/Group 2 designations.
- The proposed requirement to route emissions from the use of a sweep, purge, or inert blanket used between internal floating roofs and fixed roofs of internal floating roof storage tanks is not cost-effective and should not be included in the final rule.
- EPA should include *force majeure* provisions for emergency flaring events and PRD releases in the final rule because releases during such events are sometimes unavoidable and without such provisions, facilities are left in an impossible compliance scenario.
- We support EPA's proposed addition of maintenance vent provisions and PRD work practices, but we recommend several revisions and clarifications for inclusion in the final rule.
- We are concerned whether EPA's proposed limit for emissions of dioxins and furans from chlorinated processes is achievable. Furthermore, EPA's application of a "3 times the representative detection limit" (3XRDL) standard to P&R I and P&R II sources without any source-category specific information is arbitrary. EPA should collect additional performance test data representative of each source category and consider subcategorization where appropriate.
- We do not support EPA's proposed addition of an equipment standard for adsorber systems that are not regenerated or that are regenerated off-site. The proposed equipment standard is not cost-effective, and the proposed monitoring requirements are overly burdensome and unjustified in light of similar rules, currently approved alternative monitoring, and the fact that the requirements would not achieve any reduction in emissions.

- We support EPA's proposal to allow 3 years for compliance with most of the proposed standards; however, EPA should also allow 3 years (or more) for facilities to comply with standards that address emissions of EO and the fenceline monitoring requirements.

In addition to the comments contained herein, the associations also provide the following attachments to this letter to support our analyses:

Attachment 1: Flare Parameters for TCEQ Modeling Approach
Attachment 2: Recommended Revisions to HEM4 Inputs for Selected Facilities
Attachment 3: Title V Operating Permit Excerpts for Facility 7445611
Attachment 4: HON Source Category Revised Risk Analysis

The remaining sections of this letter provide our detailed comments on the proposed rulemaking.

2. COMMENTS ON EPA'S APPROACH TO CONSIDERATION OF RISKS AND COSTS IN CLEAN AIR ACT 112(D)(6) RULEMAKING

2.1 EPA Has Improperly Taken an Approach That Precludes Its Consideration of Costs for the Proposal's Most Burdensome Requirements.

The associations have significant concerns that the Agency's approach to address emissions of EO is inconsistent with the statute. While meaningful reductions are achievable were EPA to use its statutorily mandated eight-year technology review, EPA has largely elected to forgo this path for which it has clear authority and instead take one for which there is no statutory authorization. The Agency should carefully consider its authority not only to conduct (or reconsider) its prior risk review but also to impose controls under the unacceptable risk step that go well beyond those needed to address the Agency's proposed determination that risks for emissions from a subset of units at a subset of sources are unacceptable. Such consideration of legal authority is particularly important given the Supreme Court's recent decision to reconsider *Chevron* deference. *See Loper Bright Enterprises. v. Gina Raimondo*, Docket No. 22-451. The Agency should follow the statute's technical review process that would result in meaningful, defensible reductions rather than charting an unprecedented path.

With respect to residual risk, EPA's action is legally problematic in the following ways:

- EPA does not have blanket authority to conduct additional residual risk reviews. The Clean Air Act ("CAA" or the "Act") explicitly limits such reviews to a single occurrence. EPA cannot circumvent this limitation by reconsidering its prior actions.

- There are only limited instances where EPA cannot consider cost under CAA § 112, and the Agency's attempt to utilize one of those instances on a recurring basis (where it is explicitly designated a one-time review) thwarts Congress's intent and the plain text of the CAA.
- In the absence of Congressional direction to not consider cost after completing the mandatory risk review, EPA's voluntary decision to select a path that avoids such considerations is arbitrary.

EPA Does Not Have Authority to Perform Additional Residual Risk Reviews.

The associations recognize EPA's authority to consider risk without consideration of costs in setting emissions standards and related requirements where clearly permitted by the statute. However, in this instance, EPA is proposing to conduct a second residual risk review for the SOCMI source category after completing its one-time obligation to do so under CAA Section 112(f). It is doing so "due to the EPA's 2016 updated [Integrated Risk Information System] inhalation [unit risk estimate] for EO, which shows EO to be significantly more toxic than previously known."[3] EPA cites no statutory provision supporting authority to conduct a second risk review, but rather asserts it "retains discretion to revisit its residual risk reviews where the Agency deems that is warranted."[4] The plain text of the CAA, however, indicates that EPA does not have authority to perform additional residual risk reviews.

In establishing review obligations under section 112, Congress took strikingly different approaches with respect to technology reviews and a review to address residual risk. For technology reviews, Congress required EPA to review the standards and update them to address advancements in technology at least every eight years. With respect to risk, however, Congress took a different approach. First, Congress did not make the obligation to conduct a risk review automatic. Rather, it made such an obligation contingent on Congress's failure to act on recommendations from EPA and the Surgeon General on how to address remaining risk. See CAA § 112(f) (2)(a) ("If Congress does not act on any recommendation submitted under paragraph, EPA shall within eight years establish residual risk standards.") Additionally, unlike technology reviews, Congress established this contingent obligation as a one-time obligation, providing EPA only with the authority to conduct residual risk reviews under § 112(f) one time, within 8 years of promulgation of MACT standards. Compare § 112(d)(6), (requiring a technology review "no less often than every 8 years,") with §§ 112(f)(2)(A) and (C), (requiring EPA to promulgate standards "to provide an

[3] 88 Fed. Reg. at 25090.
[4] 88 Fed. Reg. at 25089.

ample margin of safety to protect public health" within 8 years of promulgating standards under § 112(d) but only in the absence of Congressional Action.

Congress's decision to specify residual risk reviews as a one-time obligation, as opposed to a recurring obligation, is evidence of Congressional direction that EPA conduct the review just one time. This intent is apparent not only when considered in parallel with the provisions related to technology reviews, but also when considering comparable provisions. As with technology, Congress clearly understood that there could be improvements in the understanding of health impacts associated with various pollutants. This is evidenced by the obligation to review and update National Ambient Air Quality Standards (NAAQS) at least every five years. § 109(d)(1). Had Congress intended EPA's residual risk review to reoccur to account for health-related developments, Congress would have included language to that effect, e.g., by requiring a review no less often than every 8 years, as it did in the provisions related to technology reviews in 112(d) and the NAAQS review provisions.

As the Supreme Court explained in *Hamdan v. Rumsfeld*, 548 U.S. 557, 578 (2006): "A familiar principle of statutory construction . . . is that a negative inference may be drawn from the exclusion of language from one statutory provision that is included in other provisions of the same statute. *See id*., at 330, *see also, e.g., Russello v. United States*, 464 U.S. 16, 23 (1983) ("'[W]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion'").

Both the statute and previous court decisions mean EPA cannot circumvent the limitation by reconsidering its prior actions.

There should be no question that the residual risk obligation under 112(f) is a one-time obligation. This understanding is reflected in preamble to the proposal. Moreover, the United States Court of Appeals for the District of Columbia Circuit has also recognized that, under CAA § 112(f)(2), EPA's residual risk review is a one-time review. In *Louisiana Env't Action Network v. Env't Prot. Agency*, 955 F.3d 1088, 1093 (D.C. Cir. 2020) the court explained**:**

> "In addition to its section 112(d)(6) review, EPA under section 112(f)(2) must conduct **a one-time review** within 8 years of promulgating an emission standard to, among other things, evaluate the residual risk to the public from each source category's emissions and promulgate more stringent limits as necessary 'to provide an ample margin of safety to protect public health." (emphasis added)

Similarly, in *Nat'l Ass'n for Surface Finishing v. EPA*, 795 F.3d 1, 5 (D.C. Cir. 2015) the court explained and contrasted the (d)(6) and (f)(2) reviews:

> EPA then periodically reviews and, if appropriate, revises the promulgated emissions standard, starting within eight years of the initial promulgation. **That entails two distinct, parallel analyses: a recurring "technology review" under section 112(d)(6) and a one-time "risk review" under section 112(f)(2)**. In the technology review, EPA periodically assesses, no less often than every eight years, whether standards should be tightened in view of developments in technologies and practices since the standard's promulgation or last revision, and, in particular, the cost and feasibility of developments and corresponding emissions savings. Separately, in the **one-time risk review**, EPA addresses, within eight years of a standard's promulgation, lingering public health risk that the initial standard did not eliminate. (emphasis added, citations omitted).

While recognizing that "there is no statutory CAA obligation under CAA section 112(f) for the EPA to conduct a second residual risk review of the HON or standards for affected sources producing neoprene subject to P&R I," EPA argues that it "retains discretion to revisit its residual risk reviews where the Agency deems that is warranted."[5] EPA cites *to FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (FCC v. Fox) and *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 42 (1983) (MVMA v. State Farm) in support of its position that it can reconsider. These cases do not, however, authorize EPA to circumvent congressional design. *FCC v. Fox* and *State Farm* concerned an agency's ability to change its policy, not an agency's ability to redo a statutorily required action. In *FCC v. Fox*, the FCC abandoned its prior policy not to bring an enforcement action based on "fleeting" use of indecent language. In *State Farm*, the National Highway Traffic Safety Administration rescinded crash protection requirements, maintaining that it was no longer able to find that the automatic restraint requirement would produce significant safety benefits. In both instances, the court held that changes in EPA's policy were subject to the same "arbitrary and capricious" standard as a typical rulemaking and the Agency must supply a reasoned explanation for the change.

Even if they were factually parallel, neither *FCC v. Fox* nor *State Farm* authorize EPA to exceed its statutory authority in conducting rulemakings under CAA § 112. Neither of the statutory provisions at issue in those cases provided a limitation of the frequency of the action. The CAA clearly requires EPA to conduct **one** residual risk review. EPA cannot evade this clear limitation by continuously "reconsidering" its initial risk review. *See Loving v. I.R.S., 742 F.3d 1013, 1021 (D.C. Cir. 2014) noting that an agency, in this case the IRS, "is surely free to change (or refine)*

[5] 88 Fed. Reg. at 25089.

its interpretation of a statute it administers) FCC v. Fox at 515(But the interpretation, whether old or new, ***must be consistent with the statute****.")*

EPA's failure to consider costs circumvents Congressional intent that cost be considered except in limited circumstances.

Even if the statute did not preclude EPA from revisiting a prior risk review, EPA's decision to do so is arbitrary and capricious because it has voluntarily selected an option that neglects to consider cost. Specifically, without any regard to costs, EPA is proposing to address "unacceptable risks for the SOCMI source category" by "requiring more stringent controls for process vents, storage vessels, equipment leaks, heat exchange systems, wastewater, maintenance vents, flares, and PRDs."[6] EPA claims these controls reduce EO emissions and also provide an ample margin of safety to protect public health.[7]

As discussed above, and as implicitly acknowledged by EPA in the preamble, EPA is not, at this stage, required by the Act to regulate EO emissions in a context that evaluates risk without consideration of costs. Nonetheless, EPA is attempting to use one of the few provisions of CAA § 112 that allows for the omission of cost considerations (i.e., the unacceptable risk analysis in the one-time risk review) to improperly allow it to propose revisions to the NESHAP without considering costs. As noted above, the CAA § 112(f) obligation is one that EPA has already fulfilled and thus the statute does not require that EPA conduct another such review, and indeed does not allow it. Accordingly, any such decision to do so is strictly voluntary, which EPA itself acknowledges in both the current proposal and other rulemakings where the Agency takes a comparable discretionary approach.[8]

It is not that Section 112 requires consideration of costs in every step of standard-setting, but that under section 112, such circumstances are limited. Indeed, many of the standard-setting provisions in CAA § 112 explicitly require consideration of costs, including those that prohibit consideration of cost at an earlier step of the analysis. For example, in going "beyond the floor", the original establishment of NESHAP standards, CAA § 112(d)(2) provides:

> Emissions standards promulgated under this subsection and applicable to new or existing sources of hazardous air pollutants shall require the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section

---

[6] 88 Fed. Reg. at 25119.
[7] 88 Fed. Reg. at 25123.
[8] *See* EPA Proposed "National Emission Standards for Hazardous Air Pollutants: Ethylene Oxide Emissions Standards for Sterilization Facilities Residual Risk and Technology Review." Docket ID No. EPA-HQ-OAR-2019-0178, 88 Fed. Reg. 22790 (April 13, 2023) at 22794.

> (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing sources in the category or subcategory to which such emission standard applies, through application of measures, processes, methods, systems or techniques . . ." .

Similarly, the statutorily mandated residual risk review requires consideration of cost in the adverse environmental effect portion, and the "ample margin of safety" analysis:

> If Congress does not act on any recommendation submitted under paragraph (1), the Administrator shall, within 8 years after promulgation of standards for each category or subcategory of sources pursuant to subsection (d), promulgate standards for such category or subcategory if promulgation of such standards is required in order to provide an ample margin of safety to protect public health in accordance with this section (as in effect before November 15, 1990) or **to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.** Emission standards promulgated under this subsection shall provide an ample margin of safety to protect public health in accordance with this section (as in effect before November 15, 1990), **unless the Administrator determines that a more stringent standard is necessary to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.**"

CAA § 112(f)(2)(A) (emphasis added). Additionally, EPA has erroneously interpreted § 112(d)(6) (the recurring technology review) to not require consideration of cost without an explicit mandate to do so, while ignoring the requirement to consider cost in 112(d)(2). That provision provides "The Administrator shall review and revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under this section no less often than every 8 years." Accordingly, under most circumstances under Section 112, even when as an initial step, consideration of cost may be prohibited, the Clean Air Act requires consideration of cost in subsequent steps and Congress has constrained circumstances under which cost cannot be considered. Thus, EPA is acting contrary to Congressional intent by attempting to expand its authority to conduct a risk review more than once, which is the only way in which EPA could attempt to revise the NESHAP without considering costs.

EPA's decision to voluntarily take a path that precludes consideration of costs is arbitrary.

Even if the potential for a second risk review were not directly prohibited, EPA's discretionary decision to conduct this assessment under the residual risk review framework is unreasonable. EPA has options for addressing EO that do not involve an additional risk review. Specifically, EPA has authority to consider reductions in a more holistic approach through the technology review. While EPA is unlikely to arrive at the same control determinations proposed in the instant rulemaking, but it could still achieve significant reductions. This more holistic approach would include an appropriately wider scope of factors that impact control requirements, especially cost considerations and potential supply chain disruptions for important applications like sterilized medical equipment, electric vehicles, and cleaner and agrochemicals. *See Michigan v. EPA*, 576 U.S. 743, 753 (2015) (Kagan, J. dissenting) ("Cost is almost always a relevant—and usually, a highly important—factor in regulation"). As proposed, EPA's decision has precluded it from a path that would account for costs and its proposed approach to use the residual risk framework – which expressly prohibits consideration of this highly important factor - is arbitrary.

As noted earlier, even under EPA's own view, the decision to undertake a second risk review is a discretionary action and EPA's decision to take that action would need to be judged on whether it is reasonable. As Justice Kagan noted: "Unless Congress provides otherwise, an agency acts unreasonably in establishing 'a standard-setting process that ignore[s] economic considerations.'" *Id.* (Kagan, J. dissenting) (quoting *Industrial Union Dep't v. American Petroleum Institute*, 448 U.S. 607, 670 (1980) (Powell, J., concurring in part and concurring in judgment))." Unfortunately, the approach that Justice Kagan warned against is exactly what EPA has done here. In this regulatory context, in which EPA has already completed a one-time statutory risk review, Congress has not provided otherwise – that is, it has not provided that EPA should or must conduct an additional review and not consider cost. As such, in its failure to consider costs in a risk review in the proposed rulemaking, EPA has acted unreasonably, particularly as "Federal administrative agencies are required to engage in "reasoned decisionmaking." *Allentown Mack Sales & Service, Inc. v. NLRB*, 522 U.S. 359, 374(1998) (internal quotation marks omitted). "Not only must an agency's decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational." Ibid. It follows that agency action is lawful only if it rests "on a consideration of the relevant factors." *State Farm* 463 U.S. at 43, (internal quotation marks omitted)." *Michigan* , 576 U.S. at 750. Given that the approach EPA adopted precludes such considerations, EPA should withdraw the risk review requirements and repropose following consideration under the technology review provisions of the Act.

EPA has tools to direct controls to the units for which EPA has determined risk is unacceptable.

In the proposed rule, EPA has concluded that the risk associated with EO emissions from approximately half of source category facilities are acceptable, without imposition of any additional controls. For the remainder of the facilities, EPA concludes that unacceptable risk is driven by different units at different facilities; i.e., EPA proposes to conclude that different units contribute to risk in different ways at different facilities. Accordingly, it is apparent that no one facility needs to control all units that are driving risk across the source category to make a determination that risk is acceptable at that facility. Accordingly, based on EPA's own analysis EPA is imposing on every facility controls that are not needed to address residual risk, and indeed is often imposing burdensome controls with little or no claimed environmental benefit. Such an approach is arbitrary and we urge the Agency to adopt a more targeted approach to addressing any risk that needs to be addressed.

As discussed further below, prior to taking any action to address residual risk, EPA must correct its emissions modeling information to reflect more accurate emissions level and upgraded or new controls at facility sites. Were EPA to do so, EPA would make a determination for a number of facilities that risks are acceptable and for others it would determine that units it has identified as contribution to residual risk are not meaningfully contributing to such risk. For the remaining units, EPA would determine risks acceptable even without additional controls if it were to use a more scientifically based value than the EO IRIS value, either by adopting the TECQ alternative value or by considering the full body of scientific information and incorporating a recognition of the fundamental problems with the IRIS value into its analysis, as is contemplated by long standing EPA policy. *See, e.g.,* Preamble to National Primary Drinking Water Regulations: Minor Revisions to Public Notification Rule and Consumer Confidence Report Rule, Proposed Rule, 66 Fed. Reg. 46928 at 46929 (Sept. 7, 2001); [9]

Where EPA believes that there are facilities where risks need to be addressed, the Agency is not without tools to target emission controls where needed so as to avoid over-controlling risks, or requiring extremely economically or technically burdensome, controls to achieve little or no risk reduction. In this consideration, EPA can and should target controls without consideration costs only where necessary to address unacceptable risk. For example, Congress explicitly granted EPA

[9] SAB Review, MACT I Petroleum Refining Sources and Portland Cement Manufacturing (May 7, 2010) "To assist in comparing alternative chronic toxicity values, the Panel recommends that a table be created, including all the chemicals under consideration and all of the eligible dose-response values, along with the source of the value, the year it was last updated, and a qualitative description of the effect. *If the chronic dose-response values are significantly different, especially if the value is a driver for the risk assessment, a review should be conducted to understand why the values differ, with professional judgment used to select values for the assessments*.*"*)

the authority to consider variations among sources in promulgating emission standards under CAA § 112 through subcategorization; yet, EPA has failed to utilize this statutorily available tool here. Additionally, it directed EPA to address unacceptable risk, without specifying that the same standards had to apply uniformly. Accordingly, EPA should exercise its subcategorization authority to ensure that the facilities that do not pose an unacceptable risk to human health are not subject to additional, unnecessary controls. Such subcategorization would also allow EPA to direct controls to the specific units at facilities where needed to address unacceptable risk. Alternatively, EPA could simply set a standard directed at the units as needed to address unacceptable risk. It is arbitrary and capricious for EPA to fail to consider such authority when evaluating the need for additional emissions reductions.

First, EPA could address this issue through subcategorization. Under CAA § 112(d)(1), EPA "may distinguish among classes, types, and sizes of sources within a category or subcategory in establishing such standards except that, there shall be no delay in the compliance date for any standard applicable to any source under subsection (i) as the result of the authority provided by this sentence." As, the purpose of the first step of a residual risk review is to determine whether additional standards are necessary to protect public health and the environment. It is reasonable then for EPA to promulgate standards that account for variations in sources as long as such standards result in acceptable risks, EPA's proposal subverts the intent of Congress by reading out its own authority to set standards for subcategories of facilities. As discussed above, Congress intended for cost to be considered in control options except in limited circumstances. Interpreting the statute to allow subcategorization at the risk stage to address unacceptable risk is the approach "most harmonious with its scheme and with the general purposes that Congress manifested." *Comm'r v. Engle,* 464 U.S. 206, 217 (1984) (*citing Nat'l Lab. Rels. Bd. v. Lion Oil Co*., 352 U.S. 282, 296 (1957)). This is because subcategorization would direct controls without consideration of cost to only those sources (and units at those sources) where such controls are needed to address unacceptable risk. This approach would allow EPA to address the proposed unacceptable risks in a targeted manner that would achieve the protective intent of the statute. Accordingly, if EPA proceeds with its proposal to impose more stringent emissions standards on SOCMI, the Agency should exercise its subcategorization authority and focus its standards on the highest risk sources, and then only on the units at those sources contributing to the alleged excess risk at each facility. Given the difference in alleged risk drivers for these facilities we recognize that this may well result in different control requirements for each facility.[10]

[10] For example, even among the facilities with LDAR as a driver of unacceptable risk, the frequency or LDAR or leak definition needed to address residual risk could vary.

Even if the Agency chooses not to subcategorize, EPA has recognized that it is unreasonable to require controls on all facilities when a more targeted and less costly option may achieve an acceptable level of risk. Indeed, EPA has now proposed to do so twice for EO emissions.

First, in the proposed National Emission Standards for Hazardous Air Pollutants: Ethylene Oxide Emissions Standards for Sterilization Facilities Residual Risk and Technology Review, for example, EPA tailored its acceptability analysis to address risk from the highest risk sources. EPA, however, failed to propose similarly tailored controls for the SOCMI category. In that rule, EPA indicated:

> [W]e consider two options for reducing risks. Control Option 1 would require (1) 99.94 percent emission reduction for each SCV at facilities using at least 40 tpy EO and (2) 2.8E–3 lb/hr emission limit for Group 2 room air emissions at area source facilities using at least 20 tpy. Control Option 2 would require (1) 99.94 percent emission reduction for each SCV at facilities using at least 40 tpy EO; (2) 2.8E–3 lb/hr emission limit for Group 2 room air emissions at area source facilities using at least 20 tpy, except for 2 facilities with MIR > 100-in-1-million after imposition of the requirements under Control Option 1; and (3) for these two facilities, work practice standards that would bring their MIR to 100-in-1-million.[11]

EPA did not finalize target controls due to a lack of authority; rather, the Agency determined that after correcting emissions files, no source in the source category posed unacceptable risk.

Recently, EPA proposed a similar approach as part of the sterilizers NESHAP where it directed controls at a subset of sources and implicitly considered costs in tailoring its standards. For the Commercial Sterilization Facilities, the maximum individual lifetime cancer risk (MIR) was largely driven by EO from one facility that uses 44 tons per year (tpy) of EO. In that proposed rule, EPA focused controls in several ways, reflecting both a recognition that the same controls were not needed for all facilities, and in some instances costs.

- EPA considered sterilization chamber vent (SCV) standards for facilities that use at least 40 tpy and determined that "this is feasible because our evaluation of performance tests indicates that 27 out of 36 facilities with SCVs and using at least 40 tpy of EO are already exceeding this emission reduction from their SCVs. Of those 27 facilities, 14 use wet

---

[11] 88 Fed. Reg. 22790, 22827-28 (Apr. 13, 2023).

scrubbers, six use catalytic oxidizers, four use a wet scrubber and gas/solid reactor in series, two use thermal oxidizers, and one uses a wet scrubber and catalytic oxidizer in series."[12]

- EPA also proposed standards for Group 2 room air emissions for facilities that use more than 20 tpy of EO to capture the three facilities where their MIRs exceeded 100-in-1 million.
- EPA proposed work practice standards for two high risk facilities but noted that this "could require significant costs."[13]

EPA has not, in the immediate case, explained why a similar approach would not be equally as effective in this rulemaking context given the limited number of sources that it has determined pose unacceptable risk and the variation of the drivers of risk among them. Imposition of broad, uniform control on all facilities within a category—regardless of risk posed or cost—when less stringent requirements may achieve an acceptable level of risk amounts to arbitrary overcontrol and goes beyond EPA's CAA § 112 authority to determine emissions reductions necessary to achieve acceptable risks. Such overcontrol is particularly egregious when EPA failed to consider cost in establishing them. *See, e.g. North Carolina v. EPA*, 531 F.3d 896, 908 (D.C. Cir. 2008): (Requiring measurement of "each state's 'significant contribution' to downwind nonattainment even if that measurement does not directly correlate with each state's individualized air quality impact on downwind nonattainment relative to other upwind states," i.e., rejecting uniform controls.); *EPA v. EME Homer City Generation, L.P.*, 572 U.S. 489, 521 (2014) ("EPA cannot require a State to reduce its output of pollution by more than is necessary to achieve attainment in every downwind State or at odds with the one-percent threshold the Agency has set.").

As the Agency has failed to propose such directed controls, it must withdraw the proposed rule and repropose or issue a supplemental notice and solicit comment on narrowly tailored controls to address unacceptable risk. Such a re-proposal should also incorporate updated emissions profiles from source category facilities as discussed further below.

3. EPA'S RESIDUAL RISK ANALYSIS SIGNIFICANTLY OVERSTATES THE RISKS ASSOCIATED WITH LOW-LEVEL EXPOSURE TO ETHYLENE OXIDE

The associations are concerned that EPA's risk analysis has artificially inflated risks for the source category, which has led to significantly burdensome and overly stringent requirements that will result in less environmental benefit than projected. The following comments provide additional

[12] 88 Fed. Reg. at 22826-27.
[13] 88 Fed. Reg. at 22827.

details on EPA's overstatement of risk and recommended approaches to mitigate the unnecessary conservatism applied by the Agency.

3.1 EPA's Inaccurate Ethylene Oxide IRIS Value.

As described in the risk modeling section of the preamble, the alleged unacceptable risk from sources in the source category is driven almost exclusively by the IRIS value for EO. ACC remains concerned with EPA's decision to proceed with this action while EPA's initial decision to use that value is under litigation in the D.C. Circuit. If ACC is successful in that litigation, it would immediately call into question the Agency's actions here. Accordingly, to the extent that EPA decides to proceed to address risk we urge the agency to await the outcome of that litigation. Again, the Agency by its own admission has no obligation to address risk, and accordingly, is not required to finalize those elements of the rule prior to a decision by the court.

Furthermore, while EPA does not solicit comment on the use of the IRIS value, as an underlying predicate to EPA's decision in the rule, it is required to accept comments on the use of the value. That EPA took comment on the issue in the MON does not absolve it of the need to take comment in this rule. There are multiple reasons for this, including:

1. Factual predicates for a rule are subject to notice and comment;
2. the EO value itself is not incorporated into a regulation requiring its use;
3. there continue to be issues that the Agency has yet to address in the final MON rule and/or provided new analysis upon which it has not solicited comment; and
4. EPA raised a number of questions, e.g. related to smokers and ambient concentrations, including indicating lines of information that may be relevant to analysis of these issues;

Items (3) and (4), as well as additional items related to the scientific problems with the IRIS value are addressed in the comments submitted by ACC's Ethylene Oxide Panel and are incorporated by reference into these comments. These issues, and others also undermine EPA's position that if EO went through another IRIS review, the outcome would necessarily be the same. Given that EPA has no obligation to consider risk, especially on such a constrained timeline, we again urge EPA, if it continues to rely on the IRIS value, to conduct a new review. We note that EPA's positions in the MON – i.e., that there is no new data and that there is no reason to think that the outcome would have been different were the Agency to go through a new review - are untenable. In fact, the separate comments submitted by the ACC EO Panel to this docket address this very new data and information. The claim that a new review would not have made a difference also casts a large shadow of doubt over EPA's other years-long efforts to reform the IRIS program. Specifically, accepting the claim that a new review would not have made a difference would also necessarily lead one to conclude that the Agency has wasted millions of dollars in taxpayer money reforming a program which already led to unquestionably valid results, that EPA properly responded to every direction from the SAB, and that there is no validity to any of the concerns raised by TCEQ. Such hubris is precisely the approach from EPA that led to the 2011 NAS formaldehyde recommendations and Congressional direction to incorporate them.

3.2 EPA's Overly Conservative Risk Model and Rejection of Company Corrections to Emissions Values.

The associations are concerned that EPA's use of "conservative tools and assumptions,"[14] along with the Agency's rejection of company-provided inputs and corrections, as well as inclusion of one-time and infrequent short-term emissions events, results in a gross overestimate of source-category risk for several facilities, specifically related to emissions of EO. Each of these items will be addressed in turn in the following discussion.

First, as previously explained by ACC in their comments in response to EPA's proposed MON rule, EPA's risk assessment is based on numerous conservative assumptions and approaches that tend to overestimate risk. This includes EPA's use of census block centroids to evaluate chronic exposure. EPA states that

> *The predicted risk estimates are generally conservative with respect to the modeled emission because they are not adjusted for attenuating exposure factors (such as indoor/outdoor concentration ratios, daily hours spent away from the residential receptor site, and years of lifetime spent living elsewhere than the current residential receptor site).*[15]

EPA's use of the census block centroid is generally considered health protective, especially since EPA assumes that the exposed population is continuously present (24 hours/day, 365 days/year) at that location for 70 years. In reality, the vast majority of the exposed population does not exhibit such limited mobility, but would leave the location for work, school, vacation, errands, etc., thus reducing exposure. Furthermore, the census block centroid is also generally considered health protective because EPA does not account for the fact that people spend the majority of their time indoors. According to EPA, "For many of the HAP, indoor levels are roughly equivalent to ambient levels, but for very reactive pollutants or larger particles, indoor levels are typically lower. This factor has the potential to result in an overestimate of 25 to 30 percent of exposures."[16] EPA's approach is also conservative based on the assumption that an individual will be exposed to modeled concentrations for 24 hours per day, 52 weeks per year for 70 years. People rarely live in

[14] 88 Fed. Reg. 25102.
[15] EPA-HQ-OAR-2022-0730-0085, HEM4 User's Guide pg. 3.
[16] EPA-HQ-OAR-2022-0730-0085, pg. 62

the same location for this long. In fact, EPA has estimated that the 50th percentile for years lived in a current home is 8 years, with a 90th percentile value of 32 years.[17] As a point of comparison, the current EPA regional screening levels were developed assuming a 26-year exposure duration for residents[18]; California EPA's California Office of Environmental Health Hazard Assessment (OEHHA) recommends using 30 years for evaluation of cancer risks for residents.[19] The Associations acknowledge that EPA has consistently relied on these conservative assumptions in previous risk reviews, but we encourage EPA to consider the resulting overstatement of risk when determining appropriate controls to reduce source-category risk in this rulemaking.

Revisions to Flare Emission Point Parameterization

The associations also encourage EPA to eliminate unnecessary conservatism when the Agency has the data to do so. Specifically, we recommend that EPA revise its risk assessment for EO emissions from flaring activities at HON facilities using the Texas Commission on Environmental Quality Air Quality (TCEQ) Modeling Guidelines "APDG 6232" to calculate effective stack diameter. EPA appears to have modeled all flare releases as standard point sources with most temperatures less than 1,000 Kelvin, and velocities less than one meter per second, resulting in overly conservative impacts. Because the flame from a flare will radiate the heat of combustion, the buoyancy of the combustion gases will be related to the remaining sensible heat of flare gasses.[20] To better estimate flare impacts, EPA should model emissions using an effective stack diameter because it accounts for the heat release of the flare. Modeling guidance from several agencies[21,22,23] in addition to TCEQ, suggest the use of a calculated effective diameter and/or effective height and other default parameters so the plume rise can be better characterized. Included in Attachment 1 to this comment letter are the necessary parameters for several flares, including those identified as risk drivers. Incorporating this approach reduces the risks attributable to flaring EO from 500-in-1 million to 50-in-1 million for Facility 7202911. Risks from flaring are also reduced from 90-in-1 million to 10-in-1 million for Facility 5846511. Thus, as further

---

[17] EPA. 2011. Exposure Factors Handbook. Office of Research and Development, Washington DC. U.S. EPA/600/R-09/052F. September.
[18] EPA. 2019. Regional Screening Levels User's Guide. November.
[19] Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February.
[20] TCEQ Technical Basis for Flare Parameters, https://www.tceq.texas.gov/assets/public/permitting/air/memos/flareparameters.pdf
[21] Ohio: https://epa.ohio.gov/static/Portals/27/engineer/eguides/EG69_11-14-18_final.pdf
[22] San Joaquin Valley Air Pollution Control District: http://www.valleyair.org/busind/pto/tox_resources/modeling%20guidance%20w_o%20pic.pdf.
[23] South Carolina DHEC: https://scdhec.gov/sites/default/files/media/document/BAQ_SC%20Modeling%20Guidelines_10.15.18_revised%204.15.19.pdf

explained later in these comments in Section 4.1.1, EPA should not finalize the proposed limit on the total mass of EO that can be flared in a 12-month period.

Modeling File Inputs Should be Revised to Reflect Current Facility Emissions

We also recommend that EPA incorporate all the revisions provided by companies as part of their response to EPA's January 18, 2022, Section 114 Information Collection Request (ICR). As part of their risk assessment supporting documentation, EPA's contractor, Eastern Research Group, Inc. (ERG) states:

> *Finally, although other emissions revisions were suggested by facilities as part of the CAA section 114 ICR responses, we did not use this data. Instead, we continued to use emissions reported in the 2017 NEI because there was insufficient information provided to support the suggested changes from industry.*[24]

EPA's position here contrasts with its position concerning the refinement of emissions estimates in conjunction with modeling completed in support of EPA's community outreach meetings conducted prior to issuance of the proposed rule. Agency representatives allowed facilities to update and refine emissions values so that EPA's assessment was representative of current operations and improvements to both emissions controls and emissions estimation methodologies, instead of outdated and potentially inaccurate emissions values.[25]

It is common practice in the development of emissions inventories to base calculations and estimates on conservative assumptions that result in over-reporting actual emissions, similar to EPA's conservative approach to estimating risk. Emissions calculations are often based on a variety of assumptions; for example, the assumption that an industry-wide emissions factor developed through a trade organization is representative of a specific site, or that an emissions factor developed via a stack test for a specific facility is representative of emissions throughout the entire year. These examples and others of conservative approaches, such as applying a "worst-case" stack test result to all operating modes, or using default emissions factors for equipment not subject to LDAR monitoring requirements, help facilities ensure that they comply with applicable

---

[24] EPA-HQ-OAR-2022-0730-0085, pg. 9 of Appendix I.

[25] https://www.epa.gov/caa-permitting/site-specific-information-ethylene-oxide-eto-shell-technology-center-houston-houston; https://www.epa.gov/caa-permitting/site-specific-information-ethylene-oxide-eto-bcp-ingredients-st-gabriel-la-eis; https://www.epa.gov/caa-permitting/site-specific-information-ethylene-oxide-eto-sasol-chemicals-usa-lake-charles; https://www.epa.gov/caa-permitting/site-specific-information-ethylene-oxide-eto-indorama-ventures-formerly-huntsman; https://www.epa.gov/caa-permitting/site-specific-information-ethylene-oxide-eto-union-carbide-corp-st-charles; etc.

emissions limitations and health-based standards under adverse and "worst-case" conditions. Use of conservative assumptions also helps facilities avoid potential penalties for under-reporting releases, or for not reporting releases at all (for example, under EPA's Toxic Release Inventory or TRI).

It is also common practice for facilities to refine their emissions calculation approaches in response to changes in the use and application of the results. EPA likewise refines their screening-level risk assessments when overly conservative assumptions result in a risk value above acceptable thresholds. In light of changes to the EO IRIS value and new regulations on emissions of EO, several association member companies have taken steps and invested additional resources to refine and revise their emissions calculation methodologies for EO. However, EPA decided not to incorporate these revisions and instead perform their risk analysis with outdated values (in most cases, data that are 6 years old) known by the facilities to be an inaccurate representation of current values. EPA's decision on this point is particularly troubling in part because for some of these facilities, closer scrutiny of existing emissions and updates to controls were prompted by the 2017 National Air Toxics Assessment (NATA). More recent emissions data, which often reflects new risk profiles from proactive measures to scrutinize and address emissions, should be included in EPA's modeling for this rulemaking, particularly as these actions are presumably part of EPA's intended results as part of the NATA.

To understand the impacts associated with using the most representative emissions data, we performed revised risk modeling for 11[26] of the top facilities EPA identified as contributing to source-category risk. Revisions to modeling file inputs included those previously submitted to EPA as part of companies' ICR responses and revisions provided by facilities that were not included in the ICR. Due to time constraints imposed by the comment period, we modeled emissions of the following five pollutants: acrylonitrile, ethylene dichloride, EO, naphthalene, and vinyl chloride. These pollutants were selected based on their overall contribution to the MIR that EPA identified in their technical supporting documentation.[27] Our results indicated that the MIR for each facility is driven by EO; therefore, the following comments related to risk modeling results only pertain to risk associated with EO.

Incorporating the above-noted revisions significantly reduced the cancer risk from EO for several facilities, further supporting our position that EPA's proposed changes result in arbitrary overcontrol. The following paragraphs describe major revisions that EPA should incorporate into

---

[26] The associations performed modeling for the following facilities, identified by SPPD ID: 4945211, 7202911, 5846511, 4941511, 7445611, 4926611, 8467311, 4057911, 8465611, 8468011, 4945611.
[27] EPA-HQ-OAR-2022-0730-0085.

a revised risk analysis. Further documentation of our proposed changes is provided in the Microsoft Excel file included as Attachment 2 to this comment letter.

Several NEI file revisions were provided to EPA by Facility 4941511 in response to EPA's 2022 ICR and were included in the rulemaking docket; however, EPA did not incorporate the majority of these changes into their risk modeling file. Documentation provided by facility representatives as part of their response stated:

> *Calculations have been refined in the following areas: process vents, cooling towers, wastewater, and equipment leaks. For the process vents, the most recent stack test data for each reporting year was used (where it had not been previously). In the cooling towers, the El Paso Method response factors were further refined to improve emissions estimation. For wastewater, emissions calculations were updated to better reflect actual plant conditions for each reporting year. Fugitive calculations were revised using more accurate plant data, as well. All changes were made based upon the most accurate data for that reporting year and do not use current year information to revise calculations from the previous years.*

Incorporating the revisions for Facility 4941511 reduces the source category MIR from 500-in-1 million to 370-in-1 million. By basing the risk model on the most representative emissions data for the facility, baseline cancer risks from equipment leaks are reduced from 300 to 200-in-1 million and risks from heat exchange systems are reduced by approximately 50%.

Facilities 8468011 and 4945611 also submitted emissions revisions to the Agency as part of the ICR. Facility 8468011indicated that a process vent source (CEDH0076) and transfer rack source (CEDN0137) were not subject to the HON, and facility 4945611 provided EPA with updated EO emissions rates for equipment leak fugitives based on the use of actual monitoring data instead of default SOCMI emissions factors. Incorporating the changes into the risk modeling reduces the source category MIR for each facility to less than 100-in-1 million.

Although facility 8465611) provided corrections to their dataset as part of their ICR response, further discussion with the facility revealed that revisions were warranted to those previously provided to the Agency. For example, although the facility indicated in the ICR response that several emissions sources were not subject to regulations covered by the ICR, additional investigation revealed that these sources are subject to 40 CFR Part 63, Subpart G and therefore should be included in the source category modeling (although we note that the investigation also confirmed several emissions sources are not subject to the HON and therefore were excluded from our source category modeling). In addition, emissions for a process vent were reduced to reflect those measured during a recent stack test. Incorporating these revisions reduced the facility's source category MIR from 100-in-1 million to 80-in-1 million.

As previously stated, we also reached out to member companies and facilities that were not included in EPA's ICR. Facilities 4057911 and 7445611 both provided revisions to EPA's modeling file input. Facility 4057911 provided revisions for both equipment leak and process vent emissions based on updates to incorrect calculation methodologies (for process vents) and a retagging and stream composition verification campaign for fugitive components in the EO unit. These changes reduced the source category MIR for facility 4057911 from 200-in-1 million to 85-in-1 million.

Facility 7445611 provided information demonstrating significant emissions reductions of EO since 2017 based on the permitting and installation of control devices, along with additional monitoring and product/raw material specification changes. The following provides a summary of those changes:

- The facility has installed a thermal oxidizer to control emissions from source CEDG0078, reducing the maximum permitted emissions from 4.39 tpy of EO to 0.438 tpy of EO (as indicated in Attachment 3, Title V operating permit excerpts).[28] Actual reporting year 2022 emissions of EO from this source were 0.007 tpy compared to 2.03 tpy in 2017.
- Since 2017 the facility has also implemented periodic sampling at key locations throughout the wastewater conveyance and treatment system (CEDR0095) resulting in more accurate concentration data and targeted source control efforts that have led to a decrease in emissions. As indicated in the attached permit excerpts,[29] maximum permitted emissions for the wastewater treatment system have decreased from 2.49 tpy in 2017 to 2.32 tpy in 2023. Actual emissions have also decreased from 1.15 tpy in 2017 to 0.41 tpy in 2022.
- The facility has also implemented more frequent connector monitoring for source CEAE0084 to reduce actual EO emissions from 0.19 tpy in 2017 to 0.03 tpy in 2022. These reductions are reflected in the facilities maximum permitted emissions rates as well, as demonstrated by a maximum permitted emissions rate reduction from 4.00 to 1.46 tpy of EO.[30]

[28] Refer to table "Emission Rates for TAP/HAP & Other Pollutants" of permit No. 3001-V11, issued by the Louisiana Department of Environmental Quality (LDEQ) on May 11, 2022, included in Attachment 3 to this comment letter.
[29] Refer to table "Emission Rates for TAP/HAP & Other Pollutants" of permits Nos. 2136-V9 and 2136-V8 (emissions point group GRP 0057).
[30] Refer to table "Emission Rates for TAP/HAP & Other Pollutants" of permits Nos. 2057-V10 and 2057-V12 (emissions point group FUG 0009).

- Maximum permitted emissions from sources managing Ethoxylate have also decreased from 0.47 tons per year in 2017 to 0.15 tons per year in 2023 due to a specification change on residual EO in the Ethoxylate product.[31]
- Additionally, although not required to be controlled, the facility is also in the process of permitting a previously installed thermal oxidizer that reduces emissions of EO from lab hood vents (NEBK0060) which has lowered emissions from 0.35 tpy in 2017 to 0.03 tpy in 2022.

Due to the multiple changes implemented by the facility since 2017, and the significant decreases in emissions as a result, we updated the risk model input file emissions to reporting year 2022 to better reflect current permitted operations at the facility. The updates lower the MIR for the facility from 400-in-1 million to approximately 230-in-1 million**.**

EPA Improperly Considers Infrequent, One-Time, and Startup, Shutdown, and Malfunction Events Its Risk Assessment

In addition to the overly conservative release point parameterization and the use of outdated, inaccurate emissions data, EPA's inclusion of infrequent, episodic events in their risk assessment is inappropriate. According to Section 2.9.1 of EPA's residual risk assessment,[32] "cancer risks are calculated by multiplying the corresponding ***lifetime average*** exposure estimate by the appropriate URE." (emphasis added). Thus, inclusion of short-term, infrequent, and one-time release events do not result in an accurate representation of concentrations an individual would be exposed to over a lifetime. The facility that EPA identified as driving risk for heat exchange systems reviewed their records from years 2016 to 2020 and noted no other heat exchange system leaks of EO, other than the leak identified by EPA. Thus, the leak event modeled by EPA is not representative of emissions that would contribute to a lifetime average exposure estimate and must not be treated as such.

EPA also should have excluded EO emissions from startup, shutdown, and malfunction (SSM) events (e.g., PRD releases) from its voluntary risk analysis because, as noted by the Agency, EPA is statutorily obligated to address SSM events, such as PRD releases.[33] Thus, the appropriate means to address emissions of EO from PRD releases is not as a result of a risk assessment, but rather as part of standards set under CAA Section 112(d)(2) and (d)(3) as the Agency proposes to do via requirements for PRD release monitoring and a pressure release management program.

[31] Refer to table "Emissions Rates for TAP/HAP & Other Pollutants" of permits Nos. 2727-V9 and 2727-V10 (GRP 0047) and 3001-V8 and 3001-V11 (GRP 0026).
[32] EPA-HQ-OAR-2022-0730-0085
[33] 88 Fed. Reg. 25155.

Incorporating the above revisions (i.e., revised flare parameterization, updates provided by companies, and removal of one time/infrequent release events and PRD releases) significantly reduces the source category risk attributable to EO. The table below demonstrates even if EPA insists (improperly) on using the IRIS value, risks are acceptable for most facilities even without addition of controls. Also, as reflected in the table, with the application of the modified controls options suggested in these comments, risks are within the range of where scientific uncertainties surrounding the IRIS value should lead EPA to conclude that risks are acceptable even if they are calculated in excesses of the presumptive acceptability threshold. This determination can be made notwithstanding the fact that EPA is using a risk value (the IRIS value) which significantly over states the risks associated with EO. ACC has previously submitted extensive comments documenting the significant scientific problems of the IRIS value and is also doing so in comments submitted by ACC's Ethylene Oxide Panel on this rule. Were EPA to apply a more scientifically grounded number, such as the value developed by TCEQ, EPA would, as demonstrated in the table below, determine that there is no residual risk from the source category even without imposition of additional controls. Additional details are provided in the analysis included in Attachment 4 to this comment letter.

Summary of HON Source Category Risk Based on Revised Modeling File Inputs and Proposed Control Option Revisions

Facility SPPD ID	EPA's Proposed Source-Category Risk (X-in-1 Million)	Source Category Risk Based on Modeling Input File Revisions (X-in-1 Million)	Source Category Risk Based on Modeling Input File Revisions and TCEQ URE for EO (X-in-1 Million)[1]	Source Category Risk Based on Modeling Input File Revisions + Revised Proposed Controls (X-in-1 Million)	Source Category Risk Based on Modeling Input File Revisions + Revised Proposed Controls and TCEQ URE for EO (X-in-1 Million)[1]
4945211	2000	749	0.34	241	0.11
7202911	700	239	0.11	101	0.05
5846511	600	166	0.08	80	0.04
4941511	500	369	0.17	117	0.05
7445611	400	233	0.11	85	0.04
4926611	200	268	0.12	157	0.07
8467311	200	205	0.09	141	0.06
4057911	200	85	0.04	NA	
8465611	100	96	0.04	NA	
8468011	100	59	0.03	NA	
4945611	100	36	0.02	NA	

1 – Calculated by multiplying value in column to the left by a ratio of 2.3E-06/0.005.

NA – Not analyzed: revisions to modeling file inputs results in risk below 100-in-1 million.

If after consideration of our comments, EPA determines that it is still appropriate to conduct a voluntary risk assessment, we recommend that the Agency incorporate the revisions described above and included in Attachment 2 to this comment letter in their revised analysis.[34] Incorporation of these revisions demonstrates that EPA's proposed findings are overly conservative and result in unnecessary and arbitrary control requirements. EPA should therefore revise both their risk analysis and the proposed requirements to address residual risk, as described further in the remainder of these comments. We note that the comments below generally would apply equally regardless of whether EPA applied proposed blanket requirements across the source category or used a more targeted approach. If, however, EPA adopts ACC's suggestion to direct proposed controls as needed, we note that it would also be necessary to conduct additional facility specific analyses to make sure the required controls do not result in over control under "unacceptable risk".

4. RISK REVIEW – COMMENTS ON EPA'S PROPOSED REQUIREMENTS TO ADDRESS RISK

4.1 Comments on Ethylene Oxide Provisions for Flares

4.1.1 Limitation on Total Mass of Ethylene Oxide Flared per Year.

As part of the Agency's proposed changes to address risk from EO emissions under the HON, EPA has proposed limiting the amount of EO that can be routed to a flare in any consecutive 12-month period to 20 tons. This is the uncontrolled emissions rate that the risk assessment concluded was the maximum allowable to ensure an ample margin of safety, and it is based on the two facilities contributing the greatest risk from flares and an assumption of 98% removal of organic HAP.

EPA based its conclusion that risks attributable to EO emissions from flaring activities under the HON are unacceptable on emissions from the Union Carbide Corp – St. Charles Plant;[35] however, had EPA considered and addressed the overly conservative nature of its risk model, the Agency would have concluded that no additional action is necessary to address residual risk from flaring EO at HON facilities. First, we note that EPA appears to have overstated the emissions from this facility in their supporting memorandum and the risk modeling file[36] (i.e., 2.87 tpy of EO). Per the table below, the reported emissions of EO for RY2017 were 2.66 tpy:

---

[34] The associations urge EPA to make acceptable determinations for most modeled facilities without additional controls even if the corrected emissions file shows risks above the presumptive threshold. This approach would be justified due to the uncertainties in the EO IRIS value and the extremely conservative nature of EPA's default exposure assumptions in the modeling (e.g., 70 years exposure, etc.).
[35] EPA-HQ-OAR-2022-0730-0070.
[36] EPA-HQ-OAR-2022-0730-0085.

Year 2017 EO Emissions from Flares at the Union Carbide St. Charles Facility

Flare	Year 2017 Ethylene Oxide Air Emissions (tpy)
EPN 507 Site Logistics Flare	2.435
EPN 46M – Oxide 1 Process Flare	0.035
EPN 60F – Oxide 2 Unit 3" Flare	0.193
EPN 60E – Oxide Unit 10" Flare	0.0006
Total	2.664

Second, as described in Section 3 above, EPA appears to have modeled all flare releases as standard point sources. This approach typically results in an overly conservative prediction of receptor impacts and relies on user inputs for exit gas velocity, exit gas temperature, height of release and effective stack diameter to determine the amount of buoyancy flux. To address this conservatism, flare releases can be modeled using an alternative approach adopted by the Texas Commission on Environmental Quality (TCEQ) that uses the heat input and the molecular weight of the vent gas to calculate the buoyant plume rise which results in a more representative dispersion model.[37] A former risk reviewer with EPA previously noted to Dow representatives in an e-mail communication, dated 11-13-2020, that:

> *I think if we were to have sufficient data to be able to do the special treatment of flares we would, but I think that is rare. I don't think the NEI has that. It is likely we have modeled flares as simply hot, elevated point sources with physical stack height. However, if source-category-specific data were collected, then we would consider it.*

We have included in Attachment 1 to this comment letter the necessary parameters for several flares. As described in Section 3.2 of these comments, we performed revised risk modeling runs using EPA's HEM4 model by incorporating the TCEQ flare modeling approach and revising the emissions rates of the St. Charles Facility flares as noted in the table above. These changes reduced the estimated MIR from EO flaring emissions at the St. Charles facility from 500-in-1 million to 50-in-1 million. Furthermore, after accounting for EPA's proposed revisions to address EO emissions (and incorporating our suggested revisions described herein), the source category MIR for the facility is reduced to 100-in-1 million. The revised flare parameterization also reduced the risk from EO flaring emissions at the Seadrift facility from 90-in-1 million to 10-in-1-million. Thus, the risk attributable to flaring EO in the HON source category appears to be overstated by EPA's proposed risk assessment. The results of our revised modeling runs demonstrate that flaring

[37] Refer to TCEQ's Air Quality Modeling Guidelines APDG 6232, November 2019.

EO does not pose unacceptable risk when considering the other emissions reductions proposed herein; therefore, we request EPA eliminate the proposed flare cap for EO from the final rule.

If EPA revises its risk analysis and continues to find that risks from flaring EO at HON facilities are unacceptable, we request the Agency further reconsider its proposed 20 tpy EO flaring limit. EPA's flare analysis memorandum for EO notes that, with the exception of the St. Charles Facility and the Seadrift Facility, all other HON facilities that have processes that use and emit EO are already meeting a 20 tpy EO flare load limit. We do not believe that this is the case and that this low cap will be problematic for a number of flares in the source category for the reasons described below.

It is likely that many facilities are using a flare efficiency of at least 99% for control of EO. Several of our member companies operate facilities in Texas, and according to TCEQ's "New Source Review (NSR) Emission Calculation" guidance[38] facilities may use a 99% destruction efficiency for flaring compounds containing no more than 3 carbons that contain no elements other than carbon and hydrogen in additional to a select number of compounds, including EO. The Flare Analysis memo notes that emissions of 0.4 tpy would be acceptable, thus at a 99% efficiency, the flare cap would then be 40 tpy.

We also request that EPA consider the additional impacts that eliminating delay of repair for heat exchange systems and equipment in EO service will have on our member's ability to meet a flare cap of 20 tpy of EO. Eliminating delay of repair provisions will result in additional shutdowns and startups to repair leaking equipment. Shutting down a chemical manufacturing process unit (CMPU) typically results in purging equipment, i.e., routing additional amounts of EO to flares and other control devices. Startups can also result in additional emissions due to the need to purge material until all downstream processes come online. It does not appear that EPA has considered this unintended consequence in either the proposed flare cap or the elimination of delay of repair.

Flaring of EO can be routine in nature, but for many facilities flaring occurs on an intermittent basis in response to process conditions that necessitate routing EO-containing streams to control. Sometimes, these streams can have rather large flow rates for short periods of time. PRDs from some process vessels and pressurized storage tanks are often routed to a flare or flares on-site. Although unlikely, there is the potential to vent greater than 40,000 lbs/yr (20 tpy) to a flare or flares on-site from a PRD discharge or multiple PRD discharges over the course of a twelve-month period. Regulated entities should not be punished for exceeding the flare cap if the need arises to use the flare as a process safety and emission control device to safely combust a discharge from a

[38] Available:
https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf

PRD. In fact, EPA encourages control of PRDs in this manner by proposing in §63.165(e)(3)(v)(D) that any release from a PRD in EO service is a violation, as opposed to applying the criteria in §63.165(e)(3)(v)(A) through (C) to determine if a release is a violation. The use of a flare is considered a best practice for managing these types of events as reasonably sized flares can remain in standby mode for extended periods of time where there is no activity. It is common practice to size a thermal oxidizer for a normal range of VOC concentrations and normal flow and have an emergency flare to accommodate a higher concentration and flow from an event. Using a thermal oxidizer in lieu of a flare to manage EO emissions would necessitate designing the oxidizer to accommodate these larger intermittent flows and higher inlet concentrations of VOC. But such a design might not be feasible because normal operation might represent too much of a "turndown" from emergency operation.

Considering the points above, and specifically the conflict of the implied requirement to control all EO PRD releases (which for many cases is only practical using a flare) while concurrently limiting the amount of EO routed to flares, EPA's proposed flaring restriction will likely result in facilities taking extended shutdowns to avoid exceeding the proposed flare cap. These shutdowns may last for several months as facilities will be required to wait until periods of increased flaring "fall-off" the rolling 12-month total thus calling into question the economic viability of operating such a facility and resulting in potential supply disruptions. As noted elsewhere, such disruptions could impact everything from medical supplies, cleaning supplies, electric vehicles and more. For a fuller discussion on these potentially damaging impacts, the associations support and reference the separate comments from the American Cleaning Institute submitted to this docket.

Thus, the combination of the proposed 20 tpy flare cap along with the removal of the delay of repair provisions and the proposed PRD provisions leave the owner/operator with very few options for compliance if additional shutdowns and start-ups are needed to address a leaking component and/or if a pressure relief device discharge to a flare occurs**.** This is particularly true for 12-month periods where an emergency results in the need to route EO to a flare. These emergency situations are, by definition, unforeseen and unavoidable but would still need to be counted towards the proposed cap on total EO emissions to a flare. During these periods, it is possible that a facility may not be able to restart operations due to the risk of exceeding the proposed flare cap**.** Considering these practical concerns, EPA should not finalize the flare cap provisions.

4.1.2 EPA's Proposed Solution to Replace Flares with Thermal Oxidizers is Not Practical from a Timing or Cost Perspective.

The use of flares to control emissions of both volatile organic compounds (VOC) and HAP compounds has been a regulatory option in all of EPA's air pollution rules since the 1980's and 1990's (e.g., NSPS Subparts Kb, NNN, RRR and multiple 40 CFR Part 63 MACT rules such as the HON since 1994). Now, EPA is proposing a significant change to essentially regulate away the ability to use a flare for controlling EO from sources like Group 1 storage tanks and Group 1 transfer operations (loading and unloading operations) due to an overly conservative IRIS value for EO coupled with a conservative approach to modeling emissions from flares and a conservative flare efficiency.

EPA's suggested solution to this problem is to reroute all of the EO vapors to a thermal oxidizer instead of controlling EO emissions with a flare for the logistics flares at Dow's Seadrift, TX and St. Charles, LA sites. EPA estimates that the total capital investment will be $117,726 for a new thermal oxidizer at the St. Charles, LA site and $159,294 for a new thermal oxidizer at the Seadrift, TX site in Tables 2 and 3 of their flare analysis memorandum.[39] These cost estimates are not reflective of the actual costs that Dow sites would incur in the 2023 – 2026 timeframe to install a new thermal oxidizer system at these sites.

Dow worked with their internal Subject Mater Expert (SME) on Thermal Treatment Technologies to develop an early-stage cost estimate for a thermal oxidizer at the Union Carbide Corp – St. Charles plant. Based on the experience and expertise of Dow's SME and their own internal database of project costs, Dow estimated that the total installed cost for a thermal oxidizer in this particular service is $2,700,000 or about 23 times the capital investment cited in the "Flare Analysis Memo." Our expectation is that we would find a similar disparity with the total capital investment cited for a new thermal oxidizer at our Union Carbide Corp – Seadrift Plant. It should also be noted that Dow's estimated cost is just for the thermal oxidizer and that there will be additional investment required to tie-in the thermal oxidizer to the existing vent system and to convert existing flares to a back-up / upset service.
Dow's early-stage cost estimate includes the following major cost components:

- 15% for engineering;
- 15% for major equipment; and
- 40% for construction contracts (labor and contractor provided equipment such as piping, instruments, etc.)

Further, the emissions reductions projected by EPA for the St. Charles, LA plant will not be realized. The reporting year 2022 EO emissions from the Site Logistics Flare and the Oxide 1 Process Flare were 0.882 tpy as presented in the table below.

[39] EPA-HQ-OAR-2022-0730-0070.

Flare	Year 2022 Ethylene Oxide Air Emissions (tpy)
EPN 507 Site Logistics Flare	0.822
EPN 46M – Oxide 1 Process Flare	0.06
Total	0.882

The loading to the flares in year 2022 was 88.2 tpy of EO, calculated using a 99% control efficiency [0.882/(1-.99)]. The EO emission reductions that could be achieved going from 99% to 99.9% control (e.g., by treatment with a thermal oxidizer) are therefore 0.7938 tpy [88.2*(0.999-0.99)].

In addition to our concerns regarding the capital costs and the amount of emission reductions that would actually be achieved, we are also concerned about the time to implement such a significant project at multiple sites. Typically, engineering projects that involve capital projects and process changes of this magnitude require at least following major steps.

Major Steps in Process	Estimated Time to Complete
Front end engineering design to scope the project and obtain vendor bids and quotations on a thermal oxidizer and all required process safety and monitoring equipment.	12-14 months
Vendor selection for the thermal oxidizer and obtaining capital authorization funding for the project.	3 months
Vendor constructs and/or prepares equipment and delivers equipment to the manufacturing location.	12 months[1]
Construction of the thermal oxidizer, installation of all required instrumentation, and installation of new piping/piping revisions to connect waste gas flows to the thermal oxidizer.	6-8 months
Development of operating procedures, commissioning the equipment, and placing the equipment into service.	3 months
Total Estimated Time for Project	36-40 months

1: Our members are experiencing vendor delivery times of 40 – 50 weeks even for simpler projects such as adding vent gas calorimeters for flare line monitoring. Thus, we are concerned that the lead/delivery time for an entire thermal oxidizer system could exceed 52 weeks, but 12 months is provided as a best estimate for this time.

We note that an EO flare cap could likely inhibit efforts to reduce greenhouse gas emissions. For example, as noted in their separate comments on this proposed rulemaking, ACC member company Dow is pursuing projects to further reduce emissions of EO from their facilities.

Replacing flares with a thermal oxidizer essentially maintains greenhouse gas emissions at the same level since EO is combusted in both applications. To address this concern, Dow identified another option that would allow their operations to recover some of the EO from the waste gas that currently flows to the logistics flares at St. Charles, LA and Seadrift, TX. This option involves adding an additional water scrubber to capture additional vents at the St. Charles, LA facility, and involves adding a new water scrubber to the Seadrift, TX site. These scrubbers would be installed between vent sources like storage tanks and railcar loading/unloading operations and the existing flares. The water from the scrubber would then be routed to the EO manufacturing processes at these sites where the EO could be recovered as a product stream.

However, during times when the process unit is not in service, the internal scrubber systems would be turned off as there is not a viable location to recover the EO from the scrubber water stream. Thus, during times when storage tanks and railcar loading/unloading operations would need to occur, but the production plant is not in service, the vent gas from the tank vents and loading/unloading operations would need to be routed to the existing logistics flares. Thus, the amount of EO that would be routed to these flares in the future is a function of the operating time of the production plant, and Dow is not certain that this approach would result in less than 20 tpy or even 40 tpy of EO routed to the flares at these sites.

In summary, we are concerned that these types of projects could not be implemented within two years as the proposed §63.100(k)(11) requires, nor will EPA's proposed control option achieve the intended reductions and may actually result in an increase in secondary emissions. Thus, we request that EPA either refrain from finalizing the proposed flare cap (for the reasons previously described) or increase the flare cap based on a 99% control efficiency and provide 3 years for facilities to comply with the revision.

4.2 Comments on Ethylene Oxide Provisions for Wastewater

4.2.1 Definition of "In Ethylene Oxide Service."

EPA has not provided reasonable justification for requiring Group 1 level treatment of process wastewater streams containing EO at greater than or equal to 1 part per million by weight (ppmw)—that is, process wastewater streams "in ethylene oxide service"—in accordance with proposed §§ 63.132(c)(1)(iii) and 63.132(d)(1)(ii). Specifically, EPA has proposed the term "in ethylene oxide service," stated for wastewater, in relevant part, at § 63.101 as follows.

> *For wastewater streams, any wastewater stream that contains total annual average concentration of ethylene oxide greater than or equal to 1 parts per million by weight at any flow rate.*

First, § 63.132(c)(1)(iii) addresses Group 1 and Group 2 wastewater streams only, in accordance with § 63.132(c)(1). Group 1 and Group 2 wastewater streams are necessarily process wastewaters. *See* § 63.101 (defining "Group 1 wastewater stream" and "Group 2 wastewater stream"). EPA should clarify § 63.132(c)(1)(iii) and (d)(1)(ii) accordingly; that is, by replacing the phrase "wastewater stream contains ethylene oxide" with "process wastewater stream contains ethylene oxide." Maintenance wastewaters are otherwise addressed at § 63.105 of Subpart F.

Second, proposed "in ethylene oxide service" changes the basis for designating Group 1 EO-containing process wastewater streams, which EPA has not justified. EO is a Table 9 compound. Accordingly, under the existing rule, process wastewater streams containing low concentrations of EO—that is, less than 10,000 ppmw—are Group 1 on a combined concentration/flow basis—that is, if both the annual average concentration is greater than or equal to 1,000 ppmw and the annual average flow is greater than or equal to 10 liters per minute. *See* 40 CFR § 63.132(c)(1). EPA's proposed "in ethylene oxide service" changes the magnitude of the concentration criterion from 1,000 to 1 ppmw and eliminates the corresponding flow basis.

We are concerned that changing the group designation to a concentration-only basis of 1 ppmw is arbitrary, apart from EPA's high-level statements about risk. EPA first states that the change is based on its determination that EO emissions from wastewater result in risks of 200-in-1 million at one facility and 70-in-1 million at another. 88 Fed. Reg. 25115 (III.B.2.a.iv). But EPA follows, without explanation, that "[t]o help reduce the risk from EO emissions to an acceptable level, we are proposing that owners and operators of HON sources manage and treat any wastewater streams that are 'in ethylene oxide service' (see proposed 40 CFR § 63.132(c)(1)(iii) and (d)(1)(ii)) as they would a Group 1 wastewater stream." *Id.* That is, EPA does not state why a 1 ppmw threshold is necessary to reduce risk to an acceptable level or to provide an ample margin of safety (which would require consideration of cost), nor why a Group 1 designation based only on concentration is necessary.

Likewise, EPA does not connect its cost analysis to risk for a 1 ppmw threshold for Group 1 treatment of EO-containing wastewaters.[40] EPA concludes that the wastewater streams containing at least 1 ppmw EO at five HON-subject facilities can be treated by steam stripping at a cost effectiveness ranging from $29,354 to $626,316 per ton of EO removed.[41] But EPA nowhere relates this analysis to a corresponding reduction in risk, nor why a 1 ppm threshold is required.

We have determined the following based on our revised risk analysis (described in Section 3.2), data from EPA's January 18, 2022, Section 114 Information Collection Request (ICR), and

[40] EPA-HQ-OAR-2022-0730-0087.

[41] "Analysis of Control Options for Wastewater Streams to Reduce Residual Risk of Ethylene Oxide in the SOCMI Source Category for Processes Subject to HON."

additional information supplied by our members. First, the data demonstrate a facility-wide, maximum individual lifetime risk (MIR) of less than 80 for facilities with EO emissions that are less than or equal to 0.12 tons per year from wastewater streams, when these emissions are combined with the facilities' corresponding after-control emissions (considering our recommended changes to EPA's proposal) from all other EO sources (i.e., process vents, storage tanks, equipment leaks, etc.). This MIR is below EPA's presumptive acceptable risk level (MIR) of 100. 88 Fed. Reg. 25111 (III.B.1). In accordance with EPA's fraction emitted ("Fe") factor of 0.5 for EO, EO emissions of less than or equal to 0.12 tons per year from untreated wastewater streams would be expected to result from wastewater streams containing no more than 0.24 tons per year of EO. *See* Table 34, 40 C.F.R. Part 63, Subpart G.

Our revised modeling analysis also demonstrates that, based on the available data, the risk attributable to EO emissions from wastewater is associated with streams having an EO concentration of 27 ppmw or more. We note that two facilities with risk greater than 10-in-1 million from EO in wastewater were unable to provide EO concentration data specific to the modeled sources prior to the comment period; however, we are working to obtain these additional data and expect to provide them to EPA when they become available.

We propose, based on the above-described review that EPA designate "in ethylene oxide service" for wastewater streams as follows. First, none of a facility's HON–subject, process wastewater streams are "in ethylene oxide service" if the facility's entire collection of EO-containing process wastewater streams from HON CMPUs contain no more than 0.24 tons per year of EO. Second, for facilities that exceed the facility-wide 0.24 ton per year threshold, each process wastewater stream that contains at least 27 ppmw of EO (annual average concentration basis) and has an annual average flow rate of 10 liters per minute or more is "in ethylene oxide service."

4.2.2 EPA's Impacts Analysis Overstates Emissions Reductions and Underestimates Costs

EPA has overstated emissions reductions and understated costs resulting from the proposed requirement to control all wastewater streams containing 1 ppmw or more of EO. In its analysis[42], EPA included streams that are not subject to the HON. For example, all eight streams that were analyzed from Facility ID 3136 (EIS ID 4945611) are not subject to the HON as indicated in the facility's Section 114 Information Collection Request (ICR) response[43], and should not be considered in the emissions reductions calculations as a result of proposed changes to the HON. As a result of including non-HON applicable streams, EPA has overstated the emissions reductions from the five facilities that responded to the ICR by approximately 30 tons per year (tpy). This is

[42] EPA-HQ-OAR-2022-0730-0087.
[43] EPA-HQ-OAR-2022-0730-0097.

equivalent to overstating the emissions reduction per facility by approximately 5.8 tpy. Consequently, the nationwide emissions reductions were overstated by approximately 100 tpy (that is, 5.8*17=99 tpy).

We also determined that EPA underestimated the cost associated with treatment of wastewater streams in EO service. First, our members indicate that facilities with multiple chemical manufacturing process units (CMPU) will likely require at least two strippers to remove EO from wastewater due to the potential distance between CMPUs and the need for one CMPU to continue operating while the other CMPU, and its associated wastewater stripper are shut down. Therefore, three facilities out of the five Section 114 ICR facilities included in EPA's analysis will need at least two wastewater strippers. It was assumed that the same proportion of the identified 17 facilities would also need at least two wastewater strippers. Additionally, EPA's analysis does not include costs for controlling the stripper overhead stream, which will likely require two additional thermal oxidizers to ensure facilities are able to meet the standard at all times (due to EPA's proposed removal of the startup, shutdown, malfunction (SSM) exemption, refer to Section 6.4 of these comments). To account for these additional items, we estimated the cost of wastewater strippers, assuming that approximately 10 of the identified 17 facilities would need two wastewater strippers, using cost algorithms based on the HON Background Information Document (BID), Volumes 1-b and 1-c, published November 1992 (EPA-453/D-92-016c), plus additional costs for auxiliary equipment including flow control valves and filters. We also estimated costs for two additional thermal oxidizers at each of the 17 facilities using EPA's "Incinerators and Oxidizers Calculation Spreadsheet"[44] and an assumed vent flow of 5,000 SCFM per oxidizer. We included the cost of 1,000 feet of additional duct work (500 feet per stripper/oxidizer) for each facility. Capital cost estimates included a 50% retrofit factor to account for space constraints, additional engineering, adherence to process safety management (PSM) requirements, systems integration and other unforeseen circumstances. We estimate that the total capital cost to install two additional wastewater strippers and thermal oxidizers at 17 facilities will be approximately $170 million with a $58 million per year annual operating cost, for a cost-effectiveness of $196,000 per ton of EO [$58M/(396-100)].

In regards to the previous comment above, we evaluated the costs of controlling streams having an EO concentration of 27 ppmw or more using EPA's cost analysis file. Based on this analysis, we determined that decreasing the threshold from 27 ppmw to 1 ppmw would only result in 1% additional emissions reductions. Meanwhile, decreasing the threshold from 27 ppmw to 1 ppmw would result in an annual cost increase of approximately $1,700,000 total for the five facilities

[44] Available: https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution.

considered in EPA's analysis. This corresponds to an incremental cost increase of $1,400,000 per ton of EO, a value which should not be considered cost-effective.

We are also concerned about the magnitude of emissions and emissions reduction EPA presents in their technical memorandum. EPA's assumptions used to determine the fraction of EO emitted (Fe) from wastewater systems is called into question by the emissions facilities reported in the 2017 NEI that EPA used in its risk analysis. EPA's cost analysis presents baseline EO emissions of 404 tpy, while EPA's risk analysis shows baseline EO emissions of 2.57 tpy. The Agency does not address this inconsistency in their supporting documentation. The emissions used as the baseline for EPA's risk analysis are from facilities' emissions inventories, that are based on specific facility-by-facility emissions calculations. These calculations often rely on EPA's WATER9 program or the TOXCHEM program, which can accurately account for which portions of facilities' wastewater systems are open or closed to the atmosphere. Furthermore, EPA's analysis fails to consider that EO does not persist in water indefinitely and will hydrolyze into glycols in the presence of water.[45] These site-specific emissions calculations also account for significant differences in operating times, to the extent that some of the EO-containing streams in question operate intermittently – in some extreme cases only once every two years. In contrast, EPA's cost analysis relies on the incorrect assumption that all EO-containing streams are in continuous operation, which, along with the numerous above-described oversights by EPA, vastly overstates the baseline EO emissions.

4.2.3 Addition of Wastewater to Heat Exchange Systems

EPA has proposed, at § 63.104(k), that facilities "not inject water into or dispose of water through any heat exchange system in a chemical manufacturing process unit." The requirement applies to "waters containing any amount of EO, has been in contact with any process stream containing EO, or the water is considered wastewater as defined in § 63.101." EPA's stated justification is based entirely on reducing the risk of EO; that is, "in an effort to eliminate these types of EO emissions from wastewater being injected into heat exchange systems, we are also proposing to prohibit owners and operators from injecting water into or disposing of water through any heat exchange system in a CMPU." *See* 88 Fed. Reg. 25115 (Preamble Section III.B.2.a.iv). But EPA has not identified any risk associated with EO-free wastewaters, nor has EPA otherwise justified why EO-free wastewaters are prohibited from injection.

As part of meeting sustainability and water reduction goals, facilities need the option to utilize treated wastewater and/or stormwater collected from process areas in heat exchange systems instead of discharging it. EPA's proposed prohibition on use of any wastewater in heat exchange

---

[45] American Chemistry Council, Ethylene Oxide Product Stewardship Guidance, Section 4.0.

systems is a significant barrier to water reuse projects being developed at HON facilities. EPA should allow the use of stormwater and treated wastewater that would meet National Pollutant Discharge Elimination System (NPDES) discharge requirements in heat exchange systems.

Proposed § 63.502(n)(8) of the P&R I rule similarly prohibits facilities from injecting chloroprene-containing waters into heat exchange systems. However, like proposed § 63.104(k) for the HON, proposed § 63.502(n)(8) prohibits, without justification, injecting all "water considered wastewater as defined in §63.482." EPA's sole, stated justification is consistency with the HON: "[f]inally, for consistency with our proposal for the HON to eliminate EO emissions from wastewater being injected into heat exchange systems." *See* 88 Fed. Reg. 25118 (Preamble Section III.B.2.b.ii). And proposed §§ 63.523(d)(8) and 63.524(c)(8) of the P&R II rule add broad prohibitions on injecting wastewater into heat exchange systems, except in this case without any reference to EO or chloroprene. EPA nowhere in the preamble justifies proposed §§ 63.523(d)(8) or 63.524(c)(8).

We generally support not allowing waters containing EO or chloroprene to be added to the cooling loop of a heat exchange system. However, we note that in the case of the HON and P&R I rules, a wastewater is "water that is discarded" from a CMPU or an EPPU, respectively. *See* §§ 63.102 and 63.482 (defining HON and P&R I "wastewater," respectively). Wastewater that is injected into a cooling loop is not discarded water. However, for this reason, and because EPA has stated no risk-based justification, we request that EPA remove the broad prohibition on adding EO- and chloroprene-free wastewaters to the cooling loop of heat exchange systems.

4.3 Comments on Ethylene Oxide Provisions for Process Vents and Storage Tanks and Equipment in Ethylene Oxide Service

4.3.1 Definition of "In Ethylene Oxide Service" for Process Vents

EO can be measured at 1 parts per million volume (ppmv) if the stream is relatively dry and free of interfering compounds. However, in streams such as those associated with vacuum distillation operations where motive force is provided by steam jet exhaust, and the emission point contains primarily steam with potentially trace levels of organic HAP, or in streams at the inlet to control devices, moisture and interferents will prevent obtaining measurements down to 1 ppmv. Inlet measurements are important because facilities must make measurements of the stream(s) entering emission control devices, such as scrubbers or oxidizers, in order to determine if these inlet streams are "in ethylene oxide service" especially in HON covered processes where EO may be present at very low concentrations.

Additionally, the criteria for determining whether a process vent is "in ethylene oxide service" for purposes of addressing residual risk should be derived from a demonstration that these limits are necessary to reduce risk to an acceptable level. EPA should not finalize a stringent definition of "in ethylene oxide service" that might subject facilities with small emissions of EO due to the presence of process impurities or as a result of process intermediates to stringent requirements when they pose no elevated risk. Based on a review of our revised risk analysis as described in Section 3.2, we recommend EPA revise the concentration threshold from 1 to 3 ppmv or greater and only require additional control of process vents that total 100 pounds per year or more on an affected source basis to alleviate detection limit challenges and to align with the results of the risk review.

4.3.2 EPA Should Revise the Definition of "In Ethylene Oxide Service" for Storage Tanks.

EPA has not provided reasonable justification for their proposed definition of "in ethylene oxide service" for equipment subject to monitoring under 40 CFR Part 63, Subpart G. EPA's definition at proposed 40 CFR 63.101 states:

> *(4) For storage vessels, storage vessels of any capacity and vapor pressure storing a liquid that is at least 0.1 percent by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a storage vessel, then the storage vessel is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in §63.109 to demonstrate that the storage vessel does not meet the definition of being "in ethylene oxide service". The exemption for "vessels storing organic liquids that contain organic hazardous air pollutants only as impurities" listed in the definition of "storage vessel" in this section does not apply for storage vessels that may be in ethylene oxide service. Examples of information that could suggest ethylene oxide could be present in a storage vessel, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.*

EPA's proposed definition states that if EO could be present, sampling and analysis must be performed to determine the concentration is below the 0.1 percent threshold. It is not until proposed §63.109(b)(2) that the reader is informed that one is allowed to use information specific to the stored fluid to calculate the concentration of EO, which does not necessitate sampling. We request EPA revise the definition to refer to "the procedures specified in §63.109" instead of "sampling and analysis" to reduce confusion and eliminate the potential safety risks/costs of unnecessary sampling. We also request that §63.109(b)(2) clarify that engineering judgement and process knowledge can be used to confirm that the stored liquid contains less than 0.1 weight percent of EO as follows:

> *(2) Unless specified by the Administrator, the owner or operator may calculate the concentration of ethylene oxide of the fluid stored in the storage vessels if information specific to the fluid stored is available. Information specific to the fluid stored includes concentration data from safety data sheets. Owners and operators may also use good engineering judgment and process knowledge to determine that the percent ethylene oxide content of the process fluid that is contained in or contacts the storage vessel does not exceed 0.1 percent by weight.*

Additionally, EPA's proposed definition does not comport with the definition discussed in the Agency's memorandum titled "Analysis of Control Options for Process Vents and Storage Vessels to Reduce Residual Risk of Ethylene Oxide in the SOCMI Source Category for Processes Subject to HON,"[46] which states:

> *For storage vessels of any capacity and vapor pressure, "in ethylene oxide service" means that the concentration of ethylene oxide within the tank liquid is greater than or equal to 1 ppmw. These definitions exclude ethylene oxide that is present as an impurity…*

The associations request that EPA confirm the threshold for storage vessels is 0.1%, as stated in the red-line strike-out version of the proposed rule text, and that the proposed definition should not include the phrase:

> *The exemption for "vessels storing organic liquids that contain organic hazardous air pollutants only as impurities" listed in the definition of "storage vessel" in this section does not apply for storage vessels that may be in ethylene oxide service.*

The associations also request that EPA either properly justify the 0.1% threshold, or revise the threshold to eliminate unnecessary additional control of sources that do not pose unacceptable risk. Based on our revised risk modeling analysis discussed in Section 3.2, we determined that the risk identified by EPA from storage tanks of 70-in-1 million is attributable to either facility 4945211 or 7351811. Based on our discussions with facility 4945211, all modeled emissions of EO from storage tanks at the facility originate from the pressurized EO storage spheres which store 100% EO. Facility 7351811 is not a member of our associations and we were unable to contact facility representatives for additional information; however, based on a review of the facility's Title V operating permit,[47] it appears the modeled EO storage tank emissions are also attributable to

[46] EPA-HQ-OAR-2022-0730-0074.
[47] Permit V-16-039, issued to Monument Chemical, LLC, Brandenburg, KY. Issued by the Commonwealth of Kentucky, Department for Environmental Protection, Division for Air Quality on February 24, 2017.

pressurized storage spheres containing 100% EO (refer to Section B, page 125 of 176, Emission Point 13-98). None of the remaining facilities that we modeled had risk greater than 10-in-1 million from storage tanks. Thus, the risks attributable to storage tanks are those storing high concentrations of EO, not tanks storing low concentration materials, making EPA's proposed threshold of 0.1% arbitrary. To address the unnecessary burden imposed by EPA's proposal, the Associations request EPA revise its analysis such that only those storage tanks that significantly contribute to risk, i.e., those storing 100% EO be subject to additional control requirements for EO. EPA has not adequately demonstrated that control of additional units (beyond pressurized storage spheres containing 100% EO) are necessary to address unacceptable risk. If EPA wants to control additional units under its statutory authority to address unacceptable risk, it must explain why it is necessary to do so (including justifying whatever threshold it determines necessary). Alternatively, EPA could examine control of additional storage tanks while taking into account the cost of control.

4.3.3 Process Vent and Storage Tank Control Device Requirements

EPA should not finalize the requirements to monitor and comply with a maximum flue gas flow rate for thermal oxidizers used to control EO in §63.124(a)(2)(vii)(B) and (b)(5)(ii). Because oxidizers are designed with a minimum residence time, flue gas flow rate is often not monitored. Fan operation is sometimes monitored as an indicator that exhaust gas is passing through the oxidizer, and pressure drop may be monitored as an indicator that flow through the oxidizer is not impeded. Furthermore, if the oxidizer is not equipped with heat recovery, flue gas temperatures will range from 1,500 °F to 1,600 °F, making flow measurements with an annubar (at least with normal materials of construction) or an ultrasonic flowmeter impracticable. We recommend that the requirement to measure flue gas flow rate be removed from the final rule because it is well established that combustion chamber temperature is the key variable to ensuring high destruction efficiency.

EPA has proposed to add requirements at §63.124(a)(2) for determining the control efficiency of non-flare control devices. We request EPA add flexibility to use an engineering approach where it is unsafe to sample the amount of EO at the inlet to the control device.

4.3.4 Maintenance Vent Requirements for Ethylene Oxide

EPA is proposing to cap emissions of EO from all maintenance vents combined at 1.0 ton in any consecutive 12-month period, basing this on 2017 NEI data reported by three HON-subject facilities. § 63.113(k)(4) (proposed) and 88 Fed. Reg. 25115 (III.B.2.a.v). We generally support a 12-month-based mass limit. However, data is not currently available to determine whether the 1.0 ton level is adequate. First, preventative maintenance, vessel inspections, and turnarounds tend to happen at set frequencies (e.g., annual to every ten years). Accordingly, a single year of data, as represented by the 2017 NEI, likely understates the needed occurrence of equipment openings of this type. Second, to address risk from fugitive emissions from equipment in EO service, EPA is proposing to eliminate the delay-of-repair provisions for certain types of connectors, valves, and pumps that are in EO service. § 63.171(f) (proposed). Without delay-of-repair, facilities will need to shut down and depressurize equipment more frequently for an extended period of time, which may result in increased emissions and potentially for extended periods if a facility hits the maintenance vent cap and must wait to resume operations until the 12-month limit has cleared. Specifically, one association member indicates that a shutdown results in approximately 120 pounds of additional EO emissions, and based on their leak history records, an additional 4 shutdowns per year will be required if delay-of-repair provisions are eliminated. Another member indicates that at one of their sites, there is currently one HON component out of 34,514 total HON components that is under a delay-of-repair, and the estimated emissions associated with that component are 0.278 lb/day. Under the proposed revision, the facility would need to initiate a maintenance shutdown to repair one component and the shutdown emissions (340 pounds) would exceed the emissions from the delay of repair. Because the 2017 NEI dataset does not account for emissions expected to result from additional shutdowns and depressurizations, the 1.0 ton per 12-month limit from all maintenance vents combined may not be adequate. Given the limited amount of time to comment, as well as uncertainties surrounding the impacts of the other proposed provisions, the associations are unable to provide a suggested alternative at this time.

We additionally request that EPA clarify at proposed § 63.113(k)(4) that the EO limit for maintenance vents applies separately to each of a facility's HON chemical manufacturing process units (CMPU), which is the apparent basis of the 2017 NEI dataset.

4.4 Comments on Ethylene Oxide Provisions for Equipment in Ethylene Oxide Service

4.4.1 EPA Should Revise the Definition of "In Ethylene Oxide Service" for Equipment

EPA has not provided reasonable justification for their proposed definition of "in ethylene oxide service" for equipment subject to monitoring under 40 CFR Part 63, Subpart H. EPA's definition at proposed 40 CFR 63.101 states:

> *For equipment leaks, any equipment that contains or contacts a fluid (liquid or gas) that is at least 0.1 percent by weight of ethylene oxide. If information exists that suggests ethylene oxide could be present in equipment, the equipment is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in §63.109 to demonstrate that the equipment does not meet the definition of being "in ethylene oxide service." Examples of information that could suggest ethylene oxide could be present in*

> *equipment, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.*

EPA's proposed definition states that if EO could be present, sampling and analysis must be performed to determine that the concentration is below the 0.1 percent threshold. However, EPA doesn't state until proposed §63.109(c)(2) that engineering judgement may be used to determine the EO concentration of the process fluid. We request that EPA revise the language in the definition to refer to "the procedures specified in §63.109" instead of "sampling and analysis" to reduce confusion and eliminate the potential safety risks/costs of unnecessary sampling.

The associations are also concerned about the arbitrary concentration threshold of 0.1 percent. EPA's sole justification for such a low concentration threshold is its use of a similar value in the recent National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing Residual Risk and Technology Review (MON RTR).[48] First, EPA's proposed definition will result in the application of LDAR provisions to equipment that have a high percentage of non-HAP compounds such as ethylene and methane that are more prone to leak, and maintaining such equipment at the proposed 100 ppmv leak definition with no delay of repair will be challenging.

Further, EPA does not explain why a 0.1% concentration of EO in equipment presents unacceptable risk. Our revised risk modeling described in Section 3.2 indicates that equipment containing less than 5% EO does not significantly contribute to risk. To review the risk contribution of various concentrations of EO in equipment, we compared the EO concentration data submitted as part of the Section 114 ICR, along with additional data collected from our members to the risk attributable to each source in our modeling analysis. We noted that only sources with an EO concentration above 5% significantly contributed to risk. As presented in the table below, we also analyzed the source category risk reductions for a 1% EO threshold for the facilities with an MIR greater than 100-in-1 million following our recommend revisions to the HEM4 modeling file inputs (i.e., revised flare parameterization, updates provided by companies, and removal of one time/infrequent release events).

Facility SPPD ID	**Post-Control Source Category Chronic Risk**	
	Weight Percent of EO in Equipment Used for "In Ethylene Oxide Service" Threshold	
	5%	**1%**
4945211	241	240

[48] 85 Fed. Reg. 4984.

7202911	101	101
5846511	80	78
4941511	117	110
7445611	85	85
4926611	157	157
8467311	141	141

As presented in the table above, there is no appreciable reduction in risk when considering a threshold below 5% EO. Furthermore, based on EPA's impacts analysis[49], we calculated a cost-effectiveness of $752,000 per ton using EPA's proposed requirements to reduce emissions of EO from equipment containing process fluid with less than 5% of EO by weight. The above analysis demonstrates that emissions reductions from equipment containing less than 5% EO by weight are not necessary to achieve acceptable residual risk and are not cost-effective when considered in the context of an ample margin of safety analysis.[50] Thus, we request EPA revise the definition of "in ethylene oxide service" for equipment as follows:

> *For equipment leaks, any equipment that contains or contacts a fluid (liquid or gas) that is at least ~~0.1~~ 5 percent by weight of ethylene oxide. If information exists that suggests ethylene oxide could be present in equipment, the equipment is considered to be "in ethylene oxide service" unless ~~sampling and analysis is performed as~~ the procedures specified in §63.109 are used to demonstrate that the equipment does not meet the definition of being "in ethylene oxide service." Examples of information that could suggest ethylene oxide could be present in equipment, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.*

[49] EPA-HQ-OAR-2022-0730-0003

[50] In comments submitted by the Earthjustice coalition, they contend that there is no legal justification for considering cost in the "ample margin of safety" analysis. This is contrary to settled law. *HON*, 529 F.3d at 1083 (upholding EPA's interpretation that ample margin of safety analysis "'*include[es] costs and other economic impacts*'" (quoting 54 FR at 38,045 (emphasis original)). They also contend that EPA is providing no margin of safety in contravention of the D.C. Circuit's decision in *Sierra Club* v. *EPA*, 895 F.3d 1 (D.C. Cir 2018). But that case faulted EPA for not explaining how its approach provided for an ample margin of safety. It did not dictate a specific numeric result. *Id.* at 13 (rejecting EPA's argument since EPA "has not offered a sufficient explanation of how its model includes an ample margin of safety.") *See also* Section 3.1 *supra*, discussing Benzene NESHAP and examples where EPA found acceptable risk in excess on 100-in-a -million. Earthjustice's comments ignore the regulatory history of 112, decisions of the D.C. Circuit and Congress's explicit incorporation of EPA's *Benzene* NESHAP interpretations into the 1990 Clean Air Act amendments.

4.4.2 Delay of Repair Should Not Be Eliminated for Equipment in Ethylene Oxide Service

To address risk from fugitive emissions from equipment in EO service, EPA is proposing to eliminate the delay of repair (DOR) provisions for connectors and valves in gas/vapor service and light liquid service, and for pumps in light liquid service.[51] EPA is also proposing to eliminate the monitoring skip periods for valves and connectors in gas/vapor service and light liquid service.[52] EPA's proposal to eliminate this flexibility will increase emissions of EO and increase costs for industry without appreciable reductions in risk; therefore, we request that EPA refrain from finalizing the provisions as proposed and instead continue to allow for delay of repair for these components.

Our members work to identify and repair leaking equipment in a safe and timely manner, consistent with their commitment to responsible chemical management.. Examples of this commitment include the ACC Ethylene Oxide Product Stewardship Guidance Manual[53] that was developed in conjunction with several member companies. The Manual addresses the health, safety, and environmental aspects of manufacturing, distributing, using, and disposing of EO. ACC's Ethylene Oxide Panel members also participate in regular meetings to share information to enhance operational and emergency response practices to help protect public health and the environment and sponsor product stewardship seminars to support the safe manufacture, handling, and transportation of EO.

In consideration of a more appropriate leak definition and regarding equipment leaks, our members' commitment to worker and public health is also supported through their evaluation of whether to delay the repair of leaking equipment. Our members have procedures in place to evaluate the impact on worker safety when considering whether to delay repair of a leaking EO component, including in some instances area monitoring to determine real-time concentrations of EO. This commitment is also demonstrated, in part, by the data provided to EPA in response to the Agency's January 2022 ICR. Based on ACC's review of the data submitted by facilities, a majority of chemical manufacturing process units reported no leaking connectors, valves, or pumps in EO service.

EPA's impacts assessment, however, inaccurately estimates EO leaks from certain process fugitive components. The Agency's analysis overstates the baseline emissions of EO from valves and connectors in gas/vapor and light liquid service, and from pumps in light liquid service. EPA estimated industry-wide baseline fugitive emissions from valves, connectors, and pumps using

[51] See proposed §63.171(f), EPA-HQ-OAR-2022-0730-0068.
[52] See proposed §§63.168(d)(5) and 63.174(b)(3)(vi), EPA-HQ-OAR-2022-0730-0068.
[53] https://www.americanchemistry.com/industry-groups/ethylene-oxide/resources/ethylene-oxide-product-stewardship-manual-2023

emissions factors from a 2011 memorandum[54] that identified the basis of the emissions factors as "EPA SOCMI data" without further explanation. Based on a comparison of modeled emissions of EO from equipment leaks (12.7 tpy[55]) to EPA's calculated baseline (60.4 tpy) for the source category, EPA appears to overstate baseline emissions of EO from equipment leaks by almost five times their actual level, presumably because of emissions factors based on higher than actual leak frequencies. The leak rate information provided to EPA in response to the ICR shows that the industry-wide leak frequencies for connectors and valves in EO service are significantly lower than the defaults assumed by EPA. For example, the industry-wide leak frequency for connectors in EO service was 0.20% in 2017, versus EPA's default baseline value of 0.36%, and the 2017 industry-wide leak frequency for valves in EO service was 0.27% versus EPA's default baseline value of 0.51%.

In addition to maintaining low leak frequencies, our members, to the extent possible, generally minimize the use of delay of repair for equipment in EO service as defined by its current regulatory pre-proposal levels (e.g., in 2017, approximately 90% of all leaks from connectors, valves, and pumps in EO service were repaired without delay of repair), but these provisions are needed, with consideration of the ability to repair the component while in service and worker safety, to minimize emissions and production disruptions as demonstrated by the 10% balance of leaks in 2017. However, without quantifying any potential reduction of emissions or risk associated with delay or repair, EPA is proposing to eliminate these options from 40 CFR Part 63, Subpart H.

Delay of repair provisions provide a critical flexibility for facilities to operate in a continuous manner without frequent shutdowns to repair leaking equipment. Most valves and connectors are not configured with in-line spares. Thus, if a repair requires replacement of a leaking component (which may be more likely at the proposed leak definition of 100 ppm because a typical repair like tightening valve packing may not be effective), the equipment must be isolated, and in certain instances the entire process unit must be shut down. Our member companies indicate that more frequent shutdowns will occur with the loss of the delay of repair provisions. Replacing a valve during shutdown may also require ordering a replacement, or in the case of a PRD, performing the appropriate performance and safety checks prior to installation to ensure the safety mechanism functions as designed. Lead up times to shutdowns typically provide adequate time for facilities to order and test components; however, if the delay of repair provisions are eliminated, our members are concerned that the required lead times for these activities will result in extended shutdowns. Extended shutdown times appear even more likely in light of the lengthy equipment lead times that persist following the COVID-19 pandemic. While clamp-on or bolt on, split body style leak repair clamps may be used to mitigate some small EO leaks, "off-the-shelf" solutions cannot be

[54] EPA-HQ-OAR-2010-0869.
[55] EPA-HQ-OAR-2022-0730-0085_SOCMI Actual Baseline XWalk March 2023.xlsx.

used in every instance, and it is often the case that facilities must carefully evaluate the safety considerations of "boxing in" leaking EO equipment due to the tendency of stagnant EO to polymerize which can render equipment such as control valves inoperable. Our members report that it is often necessary to evaluate and engineer a clamp style solution, a process that can take more than the allotted 15-day repair time.

The delay of repair provisions also minimize emissions (i.e., the provisions in §63.171(b)) if the operator determines that the emissions resulting from immediate repair would be greater than the fugitive emissions from delaying the repair. As previously stated, we are unable to identify in EPA's analysis where the Agency accounted for emissions reductions resulting from the elimination of delay of repair. But even if EPA had included such an analysis, the results would very likely show that eliminating the delay of repair provisions results in an increase in emissions due to more frequent shutdown events (which EPA has also failed to account for in proposing maintenance vent requirements for equipment in EO service — refer to Section 4.3.4 of these comments). The emissions resulting from shutdown events can vary from facility to facility and from CMPU to CMPU within a facility; but, based on a limited review, our members indicate that EO emissions can range from approximately 5 to 340 lbs per shutdown event. Using the SOCMI leak rate screening value correlation equations from Table 2-9 of EPA's "Protocol for Equipment Leak Emission Estimates,"[56] a 200 ppm leak of 100% EO from a light liquid valve equates to 0.00096 lb/hr or 8.4 lb/yr assuming 8,760 hours of operation. Thus, in the case of the CMPU for which a shutdown results in 85 lbs of EO emissions, repair of a leaking valve would have to be delayed for over 10 years before the emissions exceeded those generated by a shutdown. Because EPA's intent is to reduce the overall emissions of EO from HON facilities, the Agency should continue to allow companies to manage shutdowns and repair equipment leaks in a manner that minimizes emissions. By removing facilities' ability to delay repair, EPA is effectively increasing emissions of EO.

EPA should also take into consideration that removing the delay of repair provisions will potentially impact our members' ability to meet demand for critical industries. EO is used for sterilization of medical devices that cannot be sterilized via other means such as high heat or steam. Additionally, EO derivatives are used in several medical applications such as medicinal tableting, medical coatings, films, solvents, or aids in the production of pharmaceuticals and vaccines. As previously described, facilities will be required to shut down equipment more frequently and for extended periods of time, potentially impacting the supply of this important component. Further, impacts on supply could well impact broader EPA and Administration priorities, for example, EPA's recent proposal to electrify motor vehicles is dependent upon EV battery production. Such

[56] EPA-HQ-OAR-2022-0730-0003, Attachment 5(EPA-453/R-95-017).

battery production is currently generally dependent upon ethylene carbonate, which is produced by reacting EO with carbon dioxide.

In summary, we request that EPA continue to allow facilities to delay repair of leaking equipment in EO service in order to minimize overall emissions of EO, continue operations, and avoid potential supply chain interruptions of EO.

4.4.3 Reduced Monitoring Frequencies Should Not Be Eliminated for Equipment in Ethylene Oxide Service

EPA is also proposing to eliminate reduced monitoring periods for valves and connectors in EO service.[57] Similar to elimination of the delay of repair provisions, EPA's proposal to remove this flexibility will result in increased costs for industry without appreciable reductions in emissions or risk. Based on a review the of the leak rate information provided in response to EPA's January 2022 ICR, we determined that the industry-wide leak frequencies for connectors and valves in EO service are significantly lower than the default rates assigned by EPA as part of the Agency's impacts analysis (the industry-wide leak frequency for connectors in EO service was 0.20% in 2017, versus EPA's default baseline value of 0.36%, and the 2017 industry-wide leak frequency for valves in EO service was 0.27% versus EPA's default baseline value of 0.51%). Additionally, more than half of the process units for which EPA had data indicated no leaks were detected in 2017. Thus, elimination of skip periods for good performance appears unjustified based on low initial leak rates.

We are especially concerned about EPA's proposed elimination of reduced monitoring frequency for connectors in consideration of the number of connectors in EO service at our members' facilities. Based on the January 2022 ICR data and EPA's subsequent analysis, there are an estimated 73,235 connectors in EO service that EPA estimates will require an additional $2.6 million per year to monitor on a monthly basis. Unlike valves and pumps, connectors lack moving parts and have a low rate of leaks as previously mentioned (i.e., 0.20%). Gasket failure is the primary reason for connector leaks; once repaired, connectors have a low frequency of repeat leaks. Thus, monitoring the same connectors every month when leaks are generally not expected to recur results in a waste of company resources. In fact, EPA even asserts in their technical analysis that "emission reductions are insignificant" as a result of eliminating skip periods.[58] The data collected by EPA's ICR supports this assertion. Of 23 process units, three monitor connectors on a quarterly basis and had an average 2017 leak rate of 0.03%. Five process units monitor connectors every

[57] See proposed §§63.168(d)(5) and 63.174(b)(3)(vi), EPA-HQ-OAR-2022-0730-0068.
[58] EPA-HQ-OAR-2022-0730-0003, Table 6-3, footnote c, pg. 12.

four years and had a 2017 leak rate of 0.13%. Both of these leak rates are lower than the industry-wide average of 0.20% mentioned above.

Reduced monitoring frequency based on good performance is an important aspect of existing Subpart H and it should not be eliminated for equipment in EO service without an appropriate justification showing either that emissions originating from skip periods result in unacceptable risk, or that eliminating emissions from skip periods is necessary and cost effective under an ample margin of safety analysis. EPA has done neither of these in the proposed rule and even states to the contrary that eliminating skip periods has an insignificant impact on emissions as shown by the data collected by the Agency as part of the ICR. We therefore request that EPA continue to allow for reduced monitoring frequency for connectors and valves in light liquid and gas/vapor service. If EPA revises its analysis and demonstrates that additional emissions from reduced monitoring frequency pose an unacceptable risk, we encourage EPA to consider revising the thresholds in §63.168(d) and §63.174(b)(3) that qualify valves and connectors for reducing monitoring to a level that does not contribute to unacceptable risk. For example, the leak frequency threshold for connectors and valves that qualify for reduced monitoring frequency could be set to 0.10% because no process units with a leak threshold greater than this level appear to contribute to unacceptable risk.[59]

4.4.4 EPA has not Properly Justified Monthly Connector Monitoring for Equipment in Ethylene Oxide Service

As previously stated, EPA is proposing to revise §63.174 to require monitoring of connectors in EO service on a monthly basis without skip periods.[60] However, EPA has failed to adequately justify that this frequency is necessary to reduce risks from fugitive emissions to the presumptively acceptable threshold of 100-in-1 million for facility-wide risks across the source category. The following identifies the shortcomings of EPA's analysis and provides the Associations' recommended approach to reducing the potential risk from EO originating from leaking connectors. In summary, EPA has overestimated emissions reductions and underestimated associated costs. EPA should revise its analysis and conclude that quarterly connector monitoring provides sufficient emissions reductions to address risk from EO emissions from connectors, or that monthly optical gas imagining (OGI) combined with annual Method 21 connector monitoring is an equivalent alternative to monthly connector monitoring using Method 21.

---

[59] As previously discussed, only facilities 4945211 and 4941511 were identified by EPA has having fugitive emissions from equipment leaks that contributed to unacceptable risks, and based on a review of the fugitive emissions reported by each facility as part of the 2017 NEI (see EPA-HQ-OAR-2022-0730-0085) and in subsequent data corrections (EPA-HQ-OAR-2022-0730-0097), the vast majority of fugitive ethylene oxide emissions from these facilities appear to be from process units with connector and valve leak frequencies greater than 0.10%.
[60] EPA-HQ-OAR-2022-0730-0068, see proposed §63.174(b)(3)(vi).

First, monthly connector monitoring poses difficulties due to the large number of components that will require monitoring on a continuous basis. The situation is further complicated if the CMPU or facility is shut down for a portion of the month (e.g., a 2-week outage), because all components will require monitoring within a 15-day period.

Second, EPA's impacts assessment overstates the baseline emissions of EO from valves and connectors in gas/vapor and light liquid service, and pumps in light liquid service. EPA estimated industry-wide baseline fugitive emissions from valves, connectors, and pumps using emissions factors from a 2011 memorandum[61] in which the basis of the emissions factors is listed as "EPA SOCMI data" without further explanation. Based on a comparison of modeled emissions of EO from equipment leaks (12.7 tpy[62]) with EPA's calculated baseline (60.4 tpy) for the source category, EPA overstates baseline emissions of EO from equipment leaks subject to 40 CFR Part 63, Subpart H by almost five times their actual level, presumably because of emissions factors based on a higher leak frequency than is supported by the ICR data. Based on a review of the leak rates provided in response to EPA's January 2022 ICR, we determined that the industry-wide leak frequencies for connectors and valves in EO service are significantly lower than the default rates assigned by EPA as part of the Agency's impacts analysis — the industry-wide leak frequency for connectors in EO service was 0.20% in 2017, versus EPA's default baseline value of 0.36%, and the 2017 industry-wide leak frequency for valves in EO service was 0.27% versus EPA's default baseline value of 0.51%. Because EPA has overstated baseline emissions, it also overstates emissions reductions (42.3 tpy) when applying their estimated 70% reduction estimate. If 70% represents the actual reduction from baseline emissions, we estimate that the actual reduction of EO from equipment leaks based on the ICR data is 8.9 tpy (that is, 12.7 x 0.7) instead of 42.3 tpy. Replacing the 42.3 tpy EO reduction in Table 8 of the preamble[63] with 8.9 tpy, the calculated cost effectiveness of the proposed equipment leaks controls increases from $83,500 to $397,000 per ton, which is clearly not cost effective.

The associations are particularly concerned about the unnecessary burden that will be imposed on our members if EPA finalizes the requirement to perform connector monitoring on a monthly basis. As previously stated, gasket failure is the primary reason for connector leaks, and, once repaired, connectors have a low frequency of repeat leaks. Thus, monitoring connectors on a monthly basis when leaks are generally not expected to recur is a waste of company resources without an environmental benefit. To alleviate this unnecessary burden, we recommend EPA reassess the potential emissions reduction achieved by requiring quarterly connector monitoring or provide, as an alternative, annual connector monitoring paired with monthly optical gas imaging (OGI).

---

[61] EPA-HQ-OAR-2010-0869.
[62] EPA-HQ-OAR-2022-0730-0085_SOCMI Actual Baseline XWalk March 2023.xlsx.
[63] 88 Fed. Reg. 25122.

As part of the Monte Carlo analysis included with EPA's supporting analysis of the equipment leak control options[64] EPA appears to have evaluated the following options in addition to those discussed in the preamble and supporting documentation:

V2: Reduced leak definitions for valves, pumps, and connectors, with monthly monitoring of valves and pumps and quarterly monitoring of connectors;
V3: Reduced leak definitions for valves, pumps, and connectors, with monthly monitoring of valves and pumps and annual monitoring of connectors coupled with monthly OGI; and
V4: Reduced leak definitions for valves, pumps, and connectors, with monthly monitoring of valves and pumps and quarterly monitoring of connectors coupled with monthly OGI.

Based on the results of the Monte Carlo simulation, option V2 would result in a 64% emissions reduction for facility 4945211 and a 62% reduction for facility 4941511. As presented in the table below, this difference does not substantially change the MIR for any of the facilities included in our revised modeling analysis.

Facility SPPD ID	Post-Control Source Category Chronic Risk	
	Equipment Leak Emissions Reduction (4945211/all others)	
	64%/62%	74%/70%
4945211	241	186
7202911	101	92
5846511	80	70
4941511	117	102
7445611	85	75
4926611	157	148
8467311	141	138

The annual monitoring cost for connectors would be reduced from $2.8 million to $750,000 per year, and the total annual cost to address equipment leaks would be reduced from $3.5 million to $1.4 million. Additionally, the cost-effectiveness of the option would also improve from the aforementioned value of $397,000 per ton of EO to $177,000/ton [$1,392,209/(0.62*12.7)]. Thus, a majority of the emissions reductions would be achieved while minimizing cost (avoiding the additional $1.9 million per ton of EO reduced to achieve an additional 1 tpy reduction of EO by requiring monthly monitoring).

[64] EPA-HQ-OAR-2022-0730-0003, attachment 2.

Because connectors have a low frequency of repeat leaks, we encourage EPA to consider an annual or semi-annual connector monitoring frequency. If the Agency cannot justify annual or semi-annual monitoring, we encourage EPA to evaluate the high incremental cost and minimal emissions reductions of monthly connector monitoring compared to quarterly monitoring considering the Agency's historical interpretation of the 100-in-1 million cancer risk threshold. In the preamble to the MON RTR, EPA reaffirmed its previous position that the 100-in-1million cancer risk "is not a bright line indicating that risk is 'acceptable'."[65] The risk assessment EPA proposes for the HON faces the same scientific uncertainty and likely overstatement of risks as the MON RTR given the uncertainty and sensitivity of the unit risk estimate (URE) value for EO. EPA should act consistently and make a similar acceptability determination in the proposed HON given that comparable uncertainties exist with the information and emissions estimates informing the risk modeling, specifically that the contribution from equipment leaks at facility 4945211 do not pose unacceptable risk when reduced by 64%.

However, if EPA determines based on its revised assessment that it cannot be consistent with the Agency's actions in the MON RTR, we support monthly OGI monitoring and would note that annual Method 21 monitoring for connectors in EO service is likely appropriate. As previously noted, EPA's analysis shows that this option achieves the same amount of EO emissions reductions as monthly Method 21 connector monitoring. Several of our members already incorporate OGI into their LDAR programs either voluntarily/informally, or to demonstrate compliance with local and state requirements.[66] Our members report that OGI can be a highly effective and efficient tool to locate significant leaks quickly. OGI allows an operator to survey a larger number of pieces of equipment and pinpoint the origin of a leak quicker than conventional Method 21 monitoring. If EPA determines OGI is an appropriate option to include in the final rule, we recommend EPA model the specific OGI requirements after those contained in 40 CFR Part 60, Subpart OOOOa, specifically the requirements in §60.5397a(c)(7) and (d)(1) that address fugitive emissions monitoring plans where OGI is used and the requirements in §60.5397a(h)(4)(iv) that address resurveying equipment to verify repair. We note that some of the requirements in Subpart OOOOa relative to OGI monitoring will need to be adjusted to account for application of OGI to a CMPU and not an oil and gas production site, as there are more potential interferences in a CMPU.

[65] 85 Fed. Reg. 49102.
[66] For example, some of our members comply with Title 30 of the Texas Administrative Code (TAC) Part 1, Chapter 115, Subchapter D Division 3 which allows OGI as an alternative work practice to a hydrocarbon gas analyzer.

4.4.5 Any Release from a PRD in Ethylene Oxide Service Should not Automatically be Considered a Violation

EPA has proposed at §63.165(e)(3)(v)(D) that any release event from a pressure relief device (PRD) in EO service is a violation of the PRD management work practice standards under §63.165(e)(3). EPA contends that such a provision is necessary to reduce risk from PRDs in EO service; however, as noted in Section 3 above, EPA should not include PRD releases in its voluntary consideration of risk because the Agency is obligated to address such releases as part of the removal of the SSM exemptions.. Thus, EPA should not finalize the revisions as proposed but instead apply the deviation determination criteria at §63.165(e)(3)(v)(A) through (C) to PRDs in EO service.

The same technical limitations that apply generally to PRDs apply to those in EO service. PRDs are used to prevent catastrophic equipment failure, which in turn protects the health and welfare of personnel and the community. PRD releases are typically non-routine, infrequent, and episodic. Although the work practices at §63.165(e) are an effective means of potentially reducing PRD releases, there are no actions that facilities can reasonably take to avoid PRD releases that result from conditions that are beyond their control. Additionally, not all releases from PRDs in EO service can be controlled because of technical or site-specific safety concerns such as hydraulic limitations of flare systems or other controls, PRD backpressure, EO incompatibility with other collected compounds, and polymerization of EO in closed vent systems. For example, one of our members indicates that to control additional, but not all, PRDs in EO service at their EO production plants would require a large, elevated flare (approximately 250 to 300 ft high, with a diameter 54 inches or larger). This would require a new flare header, a large empty space away from process equipment (which may not be available), and millions of dollars to construct. Additionally, controlling all PRDs in the EO reactor area would require a flare so large it may or may not be feasible to construct, due to the additional flow of ethylene and methane that would require control during PRD releases.

The work practice standards under §63.165(e)(3) provide an effective framework for managing and reducing releases from all PRDs, including those in EO service because PRD releases are non-routine, infrequent, and episodic. Rather than characterizing any release from a PRD in EO service as a violation, facilities should be able to comply with the provisions of §63.165(e)(3)(v)(A) through (C) when determining whether or not a release from a PRD in EO service is a deviation. Because PRDs in EO service function in the same manner, serve the same purpose, and are subject the same technical limitations as other regulated PRDs, we urge EPA to allow facilities to comply with the provisions at §63.2480(e)(3)(v)(A) through (C) when determining whether or not a release from a PRD in EO service is a deviation.

4.5 Comments on Ethylene Oxide Provisions for Heat Exchange Systems Ethylene Oxide Service

EPA is proposing to increase the monitoring frequency for heat exchanger systems in EO service from quarterly to weekly, to reduce the allowed time of repair from 45 days after finding a leak to 15 days from the sampling date, and to prohibit delay of repair.[67] EPA estimates these revised requirements will reduce EO emissions from leaking heat exchange systems by 93% because leaks would be identified and repaired more quickly. EPA bases its proposed changes on an analysis of a single event at a facility where EO was released to the atmosphere from a large cooling water basin due to an EO leak that occurred in a heat exchanger.[68] As stated in Section 3.2 of these comments, EPA has improperly included emissions from heat exchange systems in its risk analysis and EPA should revise its risk analysis by eliminating one-time and infrequent release events and conclude emissions from heat exchange systems do not pose unacceptable risks. If the Agency revises its analysis and continues to find risks from heat exchange systems unacceptable, we request EPA consider the following comments.

4.5.1 EPA Should Revise the Definition of "In Ethylene Oxide Service" for Heat Exchange Systems

At §63.101, EPA proposes the following definition of "in ethylene oxide service" for heat exchange systems:

> *For heat exchange systems, any heat exchange system in a process that cools process fluids (liquid or gas) that are 0.1 percent or greater by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a heat exchange system, then the heat exchange system is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in §63.109 to demonstrate that the heat exchange system does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in a heat exchange system, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.*

The Associations note that the above definition is inconsistent with EPA's statement in their technical supporting document; i.e., "This definition excludes ethylene oxide that is present as an impurity."[69] We request that EPA add an exclusion for EO present as an impurity consistent with

[67] 88 Fed. Reg. 25115
[68] EPA-HQ-OAR-2022-0730-0071
[69] EPA-HQ-OAR-2022-0730-0071, pg. 9.

the Agency's supporting analysis. Additionally, the proposed definition requires sampling and analysis to demonstrate that a heat exchange system does not meet the definition of being "in ethylene oxide service" if knowledge exists suggesting that EO could be present in a heat exchange system. The process fluids serviced by heat exchange systems are the same process fluids contained in equipment that must be evaluated for "in ethylene oxide service." It is unclear why EPA has not proposed the optional use of good engineering judgement to determine the percent of EO in the process fluid as they have in §63.109(c)(2). Sampling and analyzing process fluids subject to the monitoring requirements for heat exchange systems presents the same issues and difficulties EPA identified as the basis for allowing engineering judgement under the MON RTR.[70] Furthermore, this prohibition negates the cost savings and flexibility allowed by the use of good engineering judgement for equipment leaks because facilities will be required to conduct sampling and analysis on the same process streams regardless under the heat exchange system provisions. We request that EPA treat process fluids consistently whether the evaluation of "in ethylene oxide service" applies to heat exchange systems or to equipment leaks and allow facilities to use good engineering judgement when making these determinations.

The Associations also request that EPA increase the EO concentration threshold from 0.1% to 0.5%. Consistent with our previous comments regarding the proposed threshold for equipment in EO service, the Agency appears to propose an arbitrary value of 0.1% by weight without justifying why this level is necessary to address residual risk or to provide an ample margin of safety.

We reviewed the data provided by companies in response to EPA's ICR[71] and determined that the average heat exchange system flow rate is 35,600 gallons per minute for systems in EO service that are associated with equipment subject to the HON. Using EPA's maximum assumed model leak rate of 3.6 ppmw from the Agency's technology review supporting documentation,[72] we calculated the amount of EO that could potentially leak into a heat exchange system and found that a process concentration of 0.5% of EO by weight would result in a leak of approximately 0.5 tons of EO into the heat exchange system over 135 days (quarterly sampling plus a 45-day repair period). This is approximately the same amount of post-control EO emitted by the facility identified by EPA as having unacceptable risk in the pre-control modeling scenario and acceptable risk in the post-control modeling scenario. This value is conservative because it does not account for any conversion of EO to ethylene glycol in water. As this review shows, EPA's threshold of 0.1% is not necessary to reduce risk or to ensure an ample margin of safety and should be increased to at least 0.5% of EO by weight based only on the mathematical exercise above although we recommend EPA consider allowing facilities to account for site-specific conversion of EO to

[70] See EPA-HQ-OAR-2018-0746-0200, response to comment 39, pg. 101.
[71] EPA-HQ-OAR-2022-0730-0097, Appendix D.
[72] EPA-HQ-OAR-2022-0730-0075

ethylene glycol in heat exchange systems based on the characteristics (e.g., temperature and pH) of the heat exchange system in determining the threshold definition.

4.5.2 EPA Should not Prohibit Delay of Repair for Heat Exchanger Systems in Ethylene Oxide Service

While more frequent monitoring of heat exchange systems could reduce emissions because leaks will be identified more quickly, EPA's blanket prohibition on delay of repair is overly broad and unjustified. Although repair of leaking heat exchange systems should not be unnecessarily prolonged, eliminating delay or repair coupled with a requirement to repair leaks within 15 days will likely result in increased emissions due to unplanned shutdowns and the need to purge and depressurize equipment prior to completing the repair. Allowing a repair to be delayed until the next process unit shutdown, if emissions from the delay would be less than those from the unplanned shutdown itself has been a longstanding concept in several chemical sector rules [see for example §60.482-9(c), §63.104(e)(2)(i), §63.171(c), §63.1024(d)(3), and §63.105(d)(3)]. In addition, it is unclear why EPA is proposing to not allow facilities to delay a repair by isolating the equipment such that it is no longer in EO service. In certain instances, a facility may be able to isolate a leaking heat exchanger, but cannot open the equipment until a process unit shutdown. Because the potential for emissions has been eliminated, facilities should be able to delay the repair indefinitely, as long as the leaking system is not brought back online prior to repair. We request that EPA allow heat exchange systems in EO service to delay repairs using either (the rule should provide both options)the existing provisions at §63.104(e)(2)(i), or by isolating the leaking heat exchanger from the process such that it does not remain in EO service.

4.5.3 The Associations Request the Ability to Conduct Monthly Monitoring via the Modified El Paso Method with Weekly Monitoring via a Surrogate Analysis.

As previously stated, we agree that more frequent monitoring of leaks could reduce emissions of EO because leaks will be identified and repaired more quickly. However, weekly monitoring of each heat exchange system will require either multiple sampling apparatus or frequent movement of the sampling apparatus from one system to another. For additional flexibility and reduction in costs (capital, maintenance, and personnel), and due to the low occurrence of leaks (i.e., EPA's assumption that one leak per year will occur at one of the 17 facilities with processes that use and emit EO[73]), we recommend monthly sampling via the Modified El Paso Method.

However, if EPA can justify weekly monitoring as appropriate and necessary, the monthly Modified El Paso Method monitoring could be combined with weekly analysis of a surrogate parameter as an alternative to conducting weekly sampling using the Modified El Paso Method.

[73] EPA-HQ-OAR-2022-0730-0071, Attachment 1, Table 4.

Using this alternative, facilities would be required to identify a surrogate parameter, sampling procedures, locations, frequency, and the corresponding level that indicates a leak equivalent to EPA's proposed leak definition in §63.104(g)(5). If a surrogate measurement indicates a leak, the facility would be required to confirm the presence of the leak using the Modified El Paso Method and repair as required by the proposed provisions.

5. TECHNOLOGY REVIEW

5.1 *Fenceline Monitoring Requirements*

As a general matter, our associations support monitoring efforts that are accurate, technically feasible, and based on the best available scientific methods. We strongly believe that any monitoring programs are created to provide the most useful scientifically reliable information to all stakeholders, including regulators, regulated entities, and the local communities in which our members operate. To ensure that monitoring programs can achieve such a result, our associations strongly believe that any monitoring program must use well-developed, cost-effective, technically practical monitoring methods that generate reliable data. The information produced by quality monitoring programs must also have ample time for quality assurance and control review to identify any potential errors or inconsistencies that may impact the conclusions drawn from the data. Further, the monitoring programs should be conducted by trained and qualified personnel who have some level of technical and practical experience with such programs. Finally, it is critical for the reviewed data to be distributed and communicated in a way that places the information in appropriate context, particularly when discussing potential risks associated with emissions.

Unfortunately, EPA's proposed monitoring program fails to meet these goals. Our associations are concerned that as proposed, EPA's requirements for fenceline monitoring exceed the Agency's CAA statutory authority and create several technical challenges that may comprise the integrity and clarity of the collected data. As such, our associations strongly believe that EPA should withdraw these proposed requirements from any final rulemaking. Although we believe that EPA must withdraw the proposed fenceline program, the associations hope that the Agency is open to establishing a constructive dialogue on ways to leverage all expertise to develop reliable, accurate test methods that can appropriately distinguish and provide context for data collected near facilities. This is particularly critical for situations in which, as in the case of EO concentrations, target substance concentrations near facilities are likely indistinguishable from background. To further these goals, our associations provide detailed comments in this section.

5.1.1 EPA Should Not Consider Fenceline Monitoring in the Context of its Voluntary CAA 112(f) review.

EPA solicits comment on whether it should consider fenceline monitoring as part of its residual risk rules. The associations believe that a requirement for a fenceline monitoring program in this context would be inappropriate for several reasons. First, EPA has already concluded that the controls that it has proposed to impose protect human health and the environment with an ample margin of safety. Even if EPA makes the adjustments suggested in these comments, that would remain the case. Second, as discussed herein, EPA has not identified any additional emission reductions from the source category that would be necessary to reduce risk from the source category and has failed to demonstrate that any such controls are cost effective, which would be included as any ample of safety analysis. Moreover, the action level is not tied in a meaningful way to reducing risk to an acceptable level. If EPA decides to try and use the fenceline monitoring as an additional element to address risk, we refer EPA to the comments submitted by ACC's Ethylene Oxide Panel, which address how one could go about setting a health-based action level. As noted therein, such a level would need to be tied to a more realistic assessment of the risks posed by EO, such as the TCEQ value.

5.1.2 EPA has exceeded its authority in proposing to require fenceline monitoring under CAA § 112(d)(6).

In the rulemaking, EPA proposes "to implement a fenceline monitoring program under CAA section 112(d)(6) to limit fugitive emissions."[74] Specifically, EPA is "proposing to require fenceline monitoring at facilities in the SOCMI and P&R I source categories that use, produce, store, or emit benzene, 1,3-butadiene, chloroprene, EO, ethylene dichloride, or vinyl chloride."[75]According to the preamble, EPA considers fenceline monitoring (and potentially the related root cause analysis and corrective action requirements) a work practice standard to manage fugitive emissions.[76] EPA does not quantify a level of emission reduction from the proposed fenceline monitoring, nor does it account for any of the potential costs associated with achieving such emission reductions. Indeed, under the proposal it appears that reductions would potentially be required regardless of cost. As discussed below, "[i]n the technology review, EPA periodically assesses, no less often than every eight years, whether standards should be tightened in view of developments in technologies and practices since the standard's promulgation or last revision, and, in particular, the cost and feasibility of developments and corresponding emissions savings. <u>*Nat'l Ass'n for Surface Finishing v. EPA*</u>, <u>795 F.3d 1, 5</u> (D.C. Cir. 2015)

Under CAA § 112(d)(6), EPA has the authority to revise emissions standards "as necessary." Even if the proposed fenceline monitoring requirements were emission standards, EPA has not

[74] 88 Fed. Reg. at 25142-43.
[75] 88 Fed. Reg. at 25143.
[76] 88 Fed. Reg. at 25142.

demonstrated that fenceline monitoring is necessary to reduce HAP emissions or to provide an ample margin of safety. To the contrary, the lack of emissions reductions associated with the proposed requirements show that such requirements are unnecessary to the ultimate goals of CAA § 112.

As such, fenceline monitoring is neither a revised emission standard nor a development in practices, processes, and control technologies. Even if fenceline monitoring was within the scope of EPA's authority under CAA § 112(d)(6), the imposition of such requirements is unreasonable, arbitrary, and capricious.

5.1.2.1 Fenceline monitoring is not an emissions standard or work practice within the meaning of CAA § 112.

As a preliminary matter, fenceline monitoring by itself is not an emissions standard. An "emission standard" is "a requirement . . . which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter."[77] Fenceline monitoring does not "limit the quantity, rate, or concentration of emissions" from any particular source, not does it "relat[e] to the operation or maintenance of a source to assure continuous emission reduction." By itself, fenceline monitoring does not reduce emissions, rather all that fenceline monitoring does is identify ambient concentrations of a specific chemical. It does not even identify if the chemical is from a regulated source, let alone, a specific regulated unit at such source.

Fenceline monitoring can only potentially reduce emissions when coupled with additional requirements, but, at least in this instance, EPA does not appear to claim associated reductions from the source category..[78]While EPA is proposing "action levels," again, these levels alone do not "limit the quantity, rate, or concentration of emissions." First, according to the preamble, if the emissions inventories are accurate, "all facilities should be able to meet the fenceline concentration action levels considering the controls [EPA is] proposing"[79]; therefore, even when coupled with action levels, EPA's proposal does not claim that fenceline monitoring will result in any meaningful emissions reductions from the source category. [80] Second,while exceedance of an action level may trigger further requirements, it does not, by itself or combined with fenceline

[77] 42 U.S.C. § 7602(k).
[78] *See* 88 Fed. Reg. at 25,142 ("Further, *when used with a mitigation strategy*, such as root cause analysis and corrective action upon exceedance of an action level, fenceline monitoring can be effective in reducing emissions and reducing the uncertainty associated with emissions estimation and characterization.") (emphasis added).
[79] 88 Fed. Reg. at 25,142.
[80] Because fenceline monitoring is not already required from facilities, this differs from situations where EPA is making existing control requirements enforceable.

monitoring, limit emissions--additional actions are required. And, because EPA's proposal measures ambient concentrations, an exceedance of a proposed action level is not necessarily the result of emissions from the facility in question or from an exceedance of a standard.

We note, that while EPA states that it is proposing fenceline monitoring as a work practice standard,[81] which could fall within the meaning of "any design, equipment, **work practice** or operational standard promulgated under [the CAA]," EPA does not explain how fenceline monitoring meets the requirements for a work practice standard, potentially because of the issues noted above. may explain the cause of conflicting information about what constitutes the proposed work practice standard. In any event, EPA has not demonstrated that its proposal meets the statutory requirements for imposition of work practices.

First, work practice standards are authorized only in limited circumstances under CAA § 112(h)(1) when it is not feasible to prescribe or enforce an emission standard for control of HAPs. Specifically, CAA § 112(h)(2) defines infeasibility in this context to mean that either a HAP "cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State or local law" or that "the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations." Here, EPA has not demonstrated that these circumstances have been met. Indeed, EPA has imposed several standards on the HAPs that the fenceline monitoring is intended to address (in other words, emission standards are feasible for at least some of the units EPA intends to capture through fenceline monitoring). EPA has conducted no analysis excluding these units or explained how the work practice is permissible for such units.

Second, EPA has not adequately explained what elements of the proposal are work practice standards. For example, EPA states that it is proposing a "fenceline monitoring work practice standard,"[82] which, on its face, appears to indicate that the actual monitoring component is the work practice standard. However, EPA also refers to fenceline monitoring in combination with root cause analysis and corrective action requirements and may use "fenceline monitoring" to refer to the monitoring combined with root cause and corrective action requirements.[83] In EPA's proposed residual risk and technology review for sterilization facilities, on the other hand, EPA described only the root cause analysis and corrective action requirements as the work practice standards, noting that "[i]f this long-term average exceeds an 'action-level,' then a facility is

[81] *See* 88 Fed. Reg. at 25145.
[82] 88 Fed. Reg. at 25145.
[83] *See* 88 Fed. Reg. at 25146 ("The proposed fenceline monitoring provisions would require the initiation of root cause analysis upon exceeding the annual average concentration as determined on a rolling average every sampling period.").

required to conduct the associated work practices (*i.e.*, root cause and corrective action) to identify and mitigate the source of the excess emissions."[84] EPA must explain what proposed requirements are workplace standards. It is critical that EPA fully explain its proposal to allow stakeholders a meaningful opportunity to assess the implications of the proposal and provide comments.

5.1.2.2 EPA Has Not Justified Fenceline monitoring asa development in technology.

CAA § 112(d)(6) requires EPA to "tak[e] into account developments in practices, processes, and control technologies." EPA does not define "developments" but has interpreted the term broadly[85] to include add-on control technology or equipment, improvements to add-on control technology, "process change or pollution prevention alternative that could be broadly applied to the industry," significant changes in cost, and "[a]ny work practice or operational procedure that was not identified or considered during development of the original MACT standards."[86]

While asserting that fenceline monitoring is a development, EPA fails to provide a clear tie into how it meets the statutory requirements. It is unclear, for instance what standard EPA is reviewing or how fenceline monitoring constitutes a review of the existing standards with respect to "developments in practices, processes, and control technologies." Similarly, EPA does not explain how fenceline monitoring, which by itself does not reduce emissions, is such a development. Nor does it provide any analysis as to how "root cause analysis and corrective action" are developments with respect to any particular unit/unit type. If EPA decides to proceed, it needs to provide such analysis or provide a statutory interpretation as to why its proposal comports with the statutory requirements.

In addition to the above noted issues EPA would need to address:

(1) EPA does not adequately explain how monitoring methods are a "development" nor does EPA explain what "development" category fenceline monitoring allegedly falls into (*i.e.*, a work practice standard that was not considered previously.)
(2) According to the proposed rule, at least in places, fenceline monitoring—coupled with root cause analysis and corrective action—is a work practice standard "that is a development in practices considered under CAA section 112(d)(6) for the purposes of managing fugitive

[84] National Emission Standards for Hazardous Air Pollutants: Ethylene Oxide Emissions Standards for Sterilization Facilities Residual Risk and Technology Review, 88 Fed. Reg. 22,790, 22,847 (Apr. 13, 2023).
[85] While EPA has interpreted "developments" broadly, EPA needs to examine if that interpretation is in fact the best interpretation of the statute..
[86] 88 Fed. Reg. at 25105.

emissions."[87] Specifically, however, EPA considered two *monitoring methods*—not action levels, root cause analysis, or corrective action—as developments in practices.[88]

(3) How do monitoring methods fall under any other of the broad categories of "developments" previously defined by EPA.[89]

(4) If the root cause analysis and the corrective action requirements are the work practice standards—as EPA stated in the proposed sterilization facility rule—then how are monitoring methods a work practice standard (if they are not they are not a"development" that can be considered under CAA § 112(d)(6)).

5.1.3 EPA's proposed facility-wide requirements are arbitrary and capricious.

EPA is proposing to apply fenceline monitoring and related requirements to all sources at a facility under the same owner/operator.[90] EPA recognizes that there "could be numerous source categories . . . collocated within a large facility."[91] We believe that as currently drafted, EPA's proposed requirements on this issue likely exceed its CAA authority as EPA has been instructed by Congress to set standards for sources in the source category. Attempts to regulate sources outside the source category must be addressed in the context of actions regulating those source categories.

5.1.3.1 EPA cannot regulate sources beyond those subject to the technology review.

Section 112's regulatory requirements are source category focused. EPA is directed to establish categories of sources and to establish standards for such source categories. While EPA may be able to include reviews of multiple source categories in a single federal register notice, EPA cannot regulate multiple source categories through a source-specific CAA § 112(d)(6) technology review As previously noted, under section 112, EPA established standards for source categories. 112(d)(6) requires their review every eight years, thus maintaining the review focus on the source category, not on collocated sources. Accordingly, the intent of CAA § 112(d)(6) is to review technology developments and revise emissions standards as necessary for a particular source category. Here, EPA is conducting the technology review for the SOCMI category—and not for other co-located categories. Despite this EPA is using this action as a vehicle to impose requirements on other source categories through the HON rather than evaluating such controls in the context of the applicable 112 standard. Such use of a source-specific technology review to promulgate requirements that affect an unknown number of other source categories is arbitrary

---

[87] 88 Fed. Reg. at 25143.
[88] 88 Fed. Reg. at 25143.
[89] EPA's interpretation of "developments" is overly broad, arbitrary, and capricious. Yet, even being unreasonably broad, EPA's interpretation does not capture "monitoring methods."
[90] 88 Fed. Reg. at 25145. Parts of the proposal also seem to suggest that the requirements might also apply to leases depending on the circumstances.
[91] *Id.*

and capricious and circumvents statutory design. Furthermore, EPA has not considered the costs and burdens associated with the proposed requirements for other source categories. As discussed below, EPA must consider costs in assessing technology developments under CAA § 112(d)(6). Here, EPA has failed to assess those costs as to the many other source categories that may be affected by this proposal. Here EPA has not done this and has not assessed the cost that would fall on these other source categories at all.

EPA's proposal also fails to properly provide notice or provided a meaningful opportunity to comment to all interested stakeholders.[92] The proposed fenceline monitoring and associated requirements do not merely incidentally affect other sources—EPA intends for the SOCMI category fenceline monitoring requirements to have consequences for other categories.[93] Yet, EPA has failed to put those sources on notice. The proposed rule only identifies SOCMI, P&R I, and P&RII sources as affected by this rule's "Does this action apply to me?" section—it does not identify any other sources or indicate that other sources may be subject to the proposal's requirements. Because EPA has failed to identify what other sources are co-located and, therefore, potentially subject to fenceline monitoring and corrective action requirements, it is impossible for other non-SOCMI facilities to know whether a source within their same category would be subject to the SOCMI RTR proposal[94].

5.1.3.2 Fenceline monitoring assesses ambient air quality rather than emissions from 112 sources, making it beyond the scope of CAA § 112.

CAA § 112 is designed to regulate the emissions of HAPs from specific sources. While the residual risk provisions may be designed to reduce emissions of pollutants from a sources category so that the category does not present an unacceptable risk, CAA § 112 does not grant EPA the authority to impose ambient air quality standards. The proposed requirements are not related to a process or specific emission source—the proposal is not even tied to a specific source category or to a specific facility. As EPA recognizes, fenceline monitoring can capture emissions from everywhere, not just the facility it is installed to monitor and, therefore, are unreliable for monitoring compliance with any particular emission standard. Indeed, EPA seems clear that the proposal is largely designed to identify and reduce ambient contributions from non-source category sources. If EPA wishes to regulate *ambient* air quality, EPA must do so under other provisions of the CAA.

---

[92] The associations recognize that for many parties, notice may well be sufficient. We reinforce that to provide a full review and meaningful comment on the proposed rulemaking, additional time beyond what EPA provided would be required.

[93] *See* 88 Fed. Reg. at 25145-46 (including all on-site sources when considering action level exceedances and requiring corrective action for any sources under control of the owner/operator).

[94] EPA-HQ-OAR-2018-0746-0200, response to comment 195 (recognizing in appropriateness of regulating outside the source category because of potential notice issues).

5.1.3.3 EPA did not adequately consider the costs of the proposed requirements.

Under CAA § 112(d)(6), EPA must consider costs. Specifically, EPA analyzes each developments technical feasibility, estimated costs, energy implications, and non-air environmental impacts.[95] As noted above, EPA is proposing fenceline monitoring requirements in tandem with root cause analysis and corrective action requirements. EPA, however, only considered the costs of the actual monitoring. Contrary to EPA's typical assessment of corrective action programs such as LDAR and the PRD pressure release management program,[96] EPA did not consider costs for the additional root cause analysis and corrective action requirements, nor did EPA consider the cost-effectiveness of the proposal with respect to the amount of HAPs reduced; this is because fenceline monitoring, the only part for which EPA accessed cost, does not result in any emission reductions. This is EPA's failure to consider all the costs of the proposal likely significantly underestimates the actual costs of its proposed work practice standard revision. This limited cost analysis does not fulfill the Agency's obligation under § 112(d) to consider costs. Furthermore, if the work practice standards are, in fact, the root cause analysis and corrective action requirements, then EPA has not just conducted an inadequate cost analysis but has fully failed to evaluate any costs associated with these proposed requirements. Additional issues related to cost and fenceline monitoring are discussed directly below.

5.1.4 EPA has Not Adequately Justified the Proposed Fenceline Monitoring Requirements

The Associations have several concerns regarding the fenceline monitoring requirements proposed by EPA at §63.184 in Subpart H[97] and §63.502 in Subpart U as part of the Agency's CAA Section 112(d)(6) technology review. EPA asserts that fenceline monitoring "is a development in practices under CAA Section 112(d)(6) for the purposes of managing fugitive emissions." 88 Fed. Reg. 25,142. Assuming that EPA is correct that it is, under this framing, EPA's evaluation of the fenceline monitoring requirements should have been performed using its technology review framework, which includes consideration of the cost-effectiveness of controls [refer to CAA 112(d)(2) which states EPA must take cost into consideration in establishing emission standards under Section 112 of the CAA]. Had it appropriately accounted for costs, EPA would have concluded that the proposed fenceline monitoring requirements are not cost effective, consistent

[95] 88 Fed. Reg. at 25105.
[96] Refer to EPA-HQ-OAR-2022-0730-0003 for EPA's analysis of options to control EO emissions from equipment leaks where the Agency considered the cost of repairing and re-monitoring leaking components. See also EPA-HQ-OAR-2022-0730-0010 where the Agency considered the cost of conducting root cause analyses and corrective actions as part of the pressure release management program.
[97] EPA-HQ-OAR-2022-0730-0067.

with the Agency's determination for the options considered for equipment leaks [88 Fed. Reg. 25,123], PRDs [88 Fed. Reg. 25,156], and storage vessel breathing losses [88 Fed. Reg. 25,161].

EPA estimates that the fenceline monitoring requirements will result in an industry-wide total annualized cost of $33.3 million dollars per year[98] (which we note does not include any cost associated with conducting root cause and corrective action analyses); however, with the exception of EO and chloroprene, the Agency implies that additional reductions beyond those EPA is proposing elsewhere in the rulemaking will be unnecessary to meet the fenceline action levels:

> *…we selected the proposed fenceline action levels by modeling fenceline HAP concentrations using the emissions inventories used in the residual risk assessment of the facility-wide review of the SOCMI source category and Neoprene Production source category (e.g., 2017 NEI), assuming that those reported emissions represented full compliance with all proposed HON or P&R I requirements, adjusted for additional control requirements we are proposing in this action…*
>
> *…Thus, if the reported inventories are accurate, all facilities should be able to meet the fenceline concentration action levels.*[99]

Thus, EPA has not assigned emissions reductions of benzene, 1,3-butadiene, ethylene dichloride, or vinyl chloride as a result of implementing the proposed fenceline monitoring work practice requirements. In effect, EPA has proposed additional requirements on top of those already required by the existing rules, or that will be required as part of the other proposed revisions (e.g., the proposed flare standards in §63.108, the existing and proposed monitoring requirements for process vents in §63.114 and equipment leaks and PRDs in 40 CFR Part 63, Subpart H, etc.) without identifying deficiencies in the current and proposed requirements.

EPA does in fact indicate it expects that facilities will need to make additional reductions of EO and chloroprene to comply with the fenceline action level.

> *We acknowledge that these proposed concentrations are lower than the fenceline modeled concentrations for EO and chloroprene from facilities in the SOCMI and Neoprene production source categories after implementation of our proposed standards; however, considering whole facility risks, and in light of the configuration of the emission sources subject to these rules that contribute to whole facility risk that remain for the impacted communities after the imposition of controls, we set the action levels of chloroprene and*

[98] 88 Fed. Reg. 25146.
[99] 88 Fed. Reg. 25145.

> *EO at facility boundaries as low as possible (considering method detection limitations) to ensure emission reductions anticipated from implementation of controls used to meet the proposed standards* ***and to achieve additional HAP emission reductions***.[100]

EPA has failed to quantify the additional HAP emissions reductions for EO and chloroprene that the Agency indicates will be required for compliance or to consider the cost of these additional reductions (in addition to the cost of the required root cause and corrective action analyses) as is required to meet the Agency's obligation under CAA Section 112(d)(2). EPA has, in effect, established an additional and arbitrary work practice for EO and chloroprene without providing adequate explanation of rationale regarding its authority to do so.

Further, EPA's explanation for the basis of selecting the six compounds is inadequate when compared against the rulemaking record. EPA appears to base their selection of compounds on previous and current risk drivers. EPA indicates that:

> *Several of these compounds were identified as cancer risk drivers in the prior risk and technology reviews for the HON and P&R I NESHAP conducted in 2006 (HON) and 2008 and 2011 (P&R I)…*[101]

However, with the exception of EO, the maximum risk previously found by EPA in their reviews for the HON and P&R I were well below 100-in-1 million (or not identified as a risk driver at all).

Compound	2006 HON MIR (in-1 million)[1]	2008 P&R I MIR (in-1 million)[2]	2011 P&R I MIR (in-1 million)[3]
Benzene	30	NA	29.4[4]
1,3-Butadiene	40	NA	9.8[5]
Ethylene Dichloride	20	NA	NA
Vinyl Chloride	NA	NA	NA
Chloroprene	NA	NA	NA
Ethylene Oxide	90	NA	9.8[3]

1. EPA-HQ-OAR-2005-0475-0108, Table 6-4 Cancer Risk Drivers at 14 HON Facilities With Maximum Individual Lifetime Cancer Risks Greater Than or Equal to $1x10^{-5}$.
2. EPA-HQ-OAR-2007-0211-0024.
3. EPA-HQ-OAR-2010-0600-0405, Table 3.4-2 Summary of Source Category Level Risks for Epichlorohydrin Elastomers Production.
4. EPA-HQ-OAR-2010-0600-0405, Table 3.5-2 Summary of Source Category Level Risks for Polybutadiene Rubber.

---

[100] 88 Fed. Reg. 25145 (emphasis added)
[101] EPA-HQ-OAR-2022-0730-0091

5. EPA-HQ-OAR-2010-0600-0405, Table 3.6-2 Summary of Source Category Level Risks for Styrene Butadiene-Rubber and Latex Production.

In each of these previous assessments, EPA found risks acceptable and did not adopt additional standards to address residual risk or to ensure an ample margin of safety.[102] EPA also did not identify benzene, 1,3-butadiene, ethylene dichloride, or vinyl chloride as driving unacceptable risk under this assessment.[103] Thus, while EPA's selection of benzene, 1,3-butadiene, ethylene dichloride, and vinyl chloride based on risk is questionable under EPA's framing of the option as part of their CAA 112(d)(6) technology review, a closer inspection of EPA's previous risk assessments indicate that in, in fact, these compounds did not drive any unacceptable risk. EPA's proposal to require millions of dollars of monitoring for no emissions reductions is unjustified under CAA Section 112(d)(6) and unnecessary under CAA Section 112(f).

We acknowledge that EPA found EO and chloroprene to be risk drivers as part of their voluntary assessment supporting this proposed rulemaking and are claiming unquantified emissions reductions as a result of implementing fenceline monitoring. However, the Agency determined that these additional reductions are unnecessary under CAA Section 112(f) when it proposed to find acceptable risk and an ample margin of safety after implementation of the controls detailed in Section III.B.2.a of the preamble. Furthermore, as previously stated, EPA has not determined that fenceline monitoring for these compounds will result in cost-effective emissions reductions under CAA Section 112(d)(6). It is also unclear whether fenceline monitoring, when applied to the HON source category, will yield the emissions reductions that EPA anticipates. In their technical supporting documentation, EPA points to their experience with fenceline monitoring in the refining sector, stating how that program has achieved emissions reductions through earlier detection of significant fugitive emissions than more conventional LDAR programs.[104] However, given the frequency and stringency of the proposed revisions under CAA 112(f) (e.g., increased LDAR monitoring frequency and lower leak definitions, apart from changes that we have proposed herein) it is uncertain how a fenceline monitoring program for SOCMI sources will reduce EO and chloroprene emissions through earlier detection, especially considering the sampling period (i.e., 5 or 14 days), lab turnaround time (an anticipated 1 to 2 weeks) and time for interpretation of results (another week). We note that our suggested changes to EPA's proposed EO control requirements, such as maintaining LDAR skip periods for good performance, annual or semi-annual connector monitoring, and monthly heat exchange system monitoring will not substantially impact facilities' abilities to identify emissions due to the low frequency of leaks (either via

[102] 71 Fed. Reg. 76605, 73 Fed. Reg. 76225, and 76 Fed. Reg. 22569.
[103] See Table 3.2-1 of EPA-HQ-OAR-2022-0730-0085 where EPA identified 1,3-butadiene as contributing only 2%, and benzene and ethylene dichloride contributing only 1% each to the cancer incidence based on actual emissions.
[104] EPA-HQ-OAR-2022-0730-0091.

established good performance, or the low occurrence/recurrence of leaks for connectors and heat exchange systems).

Based on the above analysis, EPA should not finalize the proposed fenceline monitoring requirements. The Agency is under no obligation to require such a program here, particularly with the significant technical issues and unanticipated economic impacts as proposed. As such, it would be most appropriate for the Agency to withdraw the proposed fenceline monitoring program to provide itself time to assess and engage with stakeholders on the potential need for such requirements. If EPA revises its analysis and determines that the requirements are justified under either CAA Section 112(d)(6) or 112(f), the Associations present the following additional items for EPA's consideration.

5.1.5 EPA Should Revise Its Analysis Presented in the Technical Supporting Documentation

The Associations are concerned that EPA has mis-represented fenceline monitor concentration data submitted by ICR respondents in the technical supporting documentation for EPA's fenceline monitoring analysis.[105] In Tables 2 through 7 of the memorandum, EPA compares the average modeled concentration to the average measured concentration for each of the six identified pollutants. EPA also presents the "monitor to model ratio" which consists of the average measured concentration divided by the average modeled concentration; however, the values presented by EPA overstate the difference in monitored to model concentration in several instances. This is because EPA's modeled concentration does not appear to factor in either 1) background pollutant concentrations or 2) method detection limits. Using EO as an example, EPA and state agencies have well established that background levels of EO are invariably present near both industrial and non-industrial locations across the country (refer to Section 5.1.10 for specific studies that establish background concentrations ranging from 0.06 μg/m^3 to 3.7 μg/m^3). Consideration of these background levels would substantially reduce the disparity between the modeled and monitored concentration. Further, in an attachment to the memorandum, EPA establishes the representative detection limit (RDL) as 0.068 μg/m^3 and 3 times the RDL value (0.20 μg/m^3) as the value that can be "measured with reasonable precision" for EO. Yet, in Table 6, EPA presents modeled concentrations well below both established background and RDL values (e.g., the modeled value for Formosa Plastics Corporation is presented as 0.002 μg/m^3, a value 34 times lower than what the facility could even possibly detect). If EPA continues to rely on a monitor to modeled concentration analyses as part of its justification for the establishment of a fenceline monitoring work practice, we encourage the Agency revise its analysis considering background concentration and detection limits in the modeled concentration, otherwise the ratio between measured and

[105] EPA-HQ-OAR-2022-0730-0091.

model concentrations will continue to be an inappropriate interpretation of model and measurement results.

5.1.6 EPA Must Clarify the Applicability of the Fenceline Monitoring Provisions

The applicability of the fenceline monitoring provisions as proposed is ambiguous and must be clarified if EPA retains the requirements in the final rule despite the shortcomings described above. Specifically, EPA must clarify in §63.184(a)(1)(i) through (iv) and §63.184(b)(1)(i) through (ii) that the term "site" refers to the HON affected source, otherwise the proposed provisions could be interpreted as triggering fenceline monitoring if a process unit other than the HON affected source (e.g., a MON MCPU that may or may not be owned by the same company as the HON owner) uses, produces, stores, or emits one of the identified compounds. As EPA has previously asserted in responses to public comments on the MON RTR, making changes to a rule that would apply to sources outside the source category/categories for the rule in question is unreasonable, e.g.:

> *…changing requirements that could apply to affected sources in other source categories would be unreasonable because sources subject to these provisions due to applicability of other NESHAP may not be paying attention to the action.*[106]

In the case above, EPA rejected a commenter's request to revise a reference error in 40 CFR Part 63, Subpart SS on the grounds that sources outside of the MON that are subject to Subpart SS through another referencing NESHAP would not receive adequate notice. As opposed to a reference citation correction, EPA's proposed fenceline provisions under HON appears to impose additional requirements on sources outside the affected source category, even if HON CMPUs do not use, produce, store, or emit the target compounds. Such a result is inappropriate because as EPA as previously stated, sources outside of the HON may not be paying attention to the action and furthermore, EPA has not considered the economic impacts of fenceline monitoring for these sources.

Part of the ambiguous applicability arises from EPA's use of the terms "Facility" and "Site" interchangeably. For example, §63.184(b)(3)(i) reads:

> *The monitoring perimeter must be located between the property boundary and the process unit(s), such that the monitoring perimeter encompasses all potential sources of the target analyte(s) specified in paragraph (b)(1) of this section. If the **site** contains process units that are disconnected (i.e., one or more process areas are not within the boundary of the*

[106] EPA-HQ-OAR-2018-0746-0200, response to comment 195.

> *main **facility**), the owner or operator must follow the requirements in paragraph (b)(3)(v) of this section.*

(Emphasis added). However; in proposed §63.184(b)(3)(v), EPA appears to imply that "site" is a subdivision of "facility", i.e.,

> *(v) If the site consists of small areas disconnected from the main facility…*

Additionally, EPA's use of the term "process unit(s)" rather than the HON-defined term "chemical manufacturing process unit" results in ambiguous applicability. Because CMPU's have been defined and utilized throughout the current regulations, the regulated entities have various programs (LDAR etc.) defined with systems in place for compliance. Without the suggested revision, the proposed provisions could be interpreted to require fenceline monitoring around 3rd party sources or sources that are not subject to the HON rule.

To clarify the applicability of the fenceline monitoring provisions, we recommend replacement of the term "site" with the phrase "source as defined in §63.101 of subpart F of this part and as defined in §63.191 of subpart I of this part" in §63.184(a)(1)(i) through (iv), and §63.184(b)(1)(i) and (ii), with corresponding additions to §63.502(a). We also request that if EPA finalizes the fenceline monitoring requirements, the Agency revise the applicability criteria such that the provisions only apply if the HON affected source emits one or more of the target compounds. Otherwise, HON affected sources that use or store these compounds without emissions to the atmosphere will be required to implement costly fenceline monitoring programs for little to no environmental benefit.

5.1.7 EPA Should Include a Minimum Threshold for "Uses, Produces, Stores, or Emits."

EPA is proposing at §63.184(a)(1) and (b)(1) that if a "site uses, produces, stores, or emits," one of the six identified compounds, the owner or operator must include it as an analyte in their fenceline monitoring program. These provisions provide no minimum threshold for use, production, storage, or emissions; thus, if only a pound of benzene is used in a laboratory setting, or if less than 10 pounds of EO are produced and stored as an impurity/byproduct, facilities will be required to spend hundreds of thousands of dollars on fenceline monitoring for no environmental or public health benefit.

As described in the comments above, EPA has not provided adequate justification for requiring a fenceline monitoring program; however, if EPA revises its analysis and determines that fenceline monitoring is necessary to reduce risk to an acceptable level, or to ensure an ample margin of safety, or that fenceline monitoring would provide cost-effective emissions reductions under CAA Section 112(d)(6), the Associations encourage EPA to establish minimum thresholds for each activity that are either necessary from a risk context under CAA Section 112(f), or cost-effective from a technology review perspective under CAA Section 112(d)(6). At a minimum, we recommend that EPA exclude the use, production, storage, or emissions of the identified compounds as a result of the following activities:

- Housekeeping or building maintenance including painting buildings and equipment, paving, use of janitorial products, etc.;
- Laboratory and research and development activities including experimentation, chemical and physical analysis for quality control, and activities that produce no commercial product or feedstock material;
- Emissions that occur as a result of the combustion of primary fuel or secondary fuel, including fuel gas, fossil fuel, and biomass or bio-based solid fuel;
- Use and emissions that occur as a result of operating or maintaining motor vehicles, aircraft, marine vessels, locomotives, or other self-propelled vehicles with internal combustion engines.
- Use an emissions that occur as a result of operating or maintaining portable equipment, such as air compressors, pumps, and generators that are powered with internal combustion engines.
- Use, production, storage or emissions that occur as a result of incidental by-products or trace impurities in feedstocks.

We also recommend that EPA clarify that the phrase "if the site uses, produces, stores," one of the covered chemicals, means that greater than 25,000 pounds per year of a chemical must be used, produced, or stored in HON CMPUs. A 25,000 pounds per year criterion aligns with other EPA regulations such as 40 CFR §372.25(a), which is the threshold for reporting of air emissions under EPA's SARA Section 313 program.

We also recommend that EPA adopt a minimum emissions threshold that would require HON affected sources to perform fenceline monitoring. EPA's background documentation[107] indicates that, with the exception of EO and chloroprene, the Agency selected the fenceline action levels by modeling emissions from the post-control emissions file in the residual risk assessment and selecting the maximum annual average fenceline concentration. Thus, one potential option would be to set emission thresholds at 50% of the source category emissions for the facilities that were used to set the proposed action level. This approach should also be applied for EO and chloroprene because the Agency proposed to find acceptable risk and an ample margin of safety for these pollutants after implementation of the controls detailed in Section III.B.2.a of the preamble, thus making additional reductions of EO and chloroprene unnecessary and unsupported by any

[107] EPA-HQ-OAR-2022-0730-0091.

rulemaking authority. The Table below presents the emissions threshold derived using this approach.

Compound	Facility ID	Source-Category Emissions (TPY)	Threshold Emissions (TPY)
Benzene	7331911	10.6	5.3
1,3-Butadiene	6157311	10.2	5.1
Chloroprene	17640111	2.1	1.1
Ethylene Dichloride	7915011	21.3	10.7
Ethylene Oxide	4945611	0.07	0.04
Vinyl Chloride	4057611	2.4	1.2

We additionally request that EPA clarify the applicability of fenceline monitoring for refineries with HON CMPUs producing only benzene. These refineries have already implemented and operate fenceline monitoring systems in accordance with 40 CFR Part 63, Subpart CC. We propose that the following provision be added to 40 CFR 63.110: "Owners and operators of CMPUs that use, produce, store, or emit benzene and do not use, produce, store or emit 1, 3 butadiene, chloroprene, ethylene dichloride, EO, or vinyl chloride and are subject to the fenceline requirements of this subpart, and are located within the property boundary of a petroleum refinery subject to the fenceline monitoring requirements of 40 CFR Part 63, Subpart CC are required to comply only with the provisions specified in 40 CFR § 63.658.

5.1.8 The Number and Location of Canisters Required, Along with the Monitoring Frequency, Should be Revised.

EPA proposes a monitoring program for EO using the new proposed Method 327 that entails the use of 10 Summa canisters per monitoring episode (8 monitor locations, 1 co-located duplicate monitor, and 1 field blank). EPA's proposal also requires that a 24-hour sampling event be conducted every 5 days for a total of 73 monitoring episodes per year and that each monitoring episode commence within 120 hours of the last monitoring episode +/- 6 hours.

We are concerned that monitoring every 5 days will be unsustainable. Our concerns with this proposal are outlined below. To alleviate these issues, EPA should finalize the HON rule with a requirement for monitoring on a two-week frequency using a maximum of six fixed canister locations.

We also note that §63.184(a)(2), which sets out requirements for passive monitor locations, appears to have either a typographical error or an incomplete thought in sub-paragraph (i). The sub-paragraph starts with monitor siting locations but ends with a requirement for 15-day repair, with no transition. We believe EPA may have meant to say “For this subpart, an additional monitor is not required if the only emission sources within 50 meters of the monitoring boundary are equipment leak sources satisfying all of the conditions in paragraphs (a)(2)(i)(A) through (a)(2)(i)(C) of this section. ~~must be repaired no later than 15 calendar days after it is detected with no provisions for delay of repair.~~ If a **leak is found and a** repair is not completed within 15 calendar days, the additional passive monitor specified in Section 8.2.1.3 in Method 325A of appendix A of this part must be used.” Nevertheless, EPA should edit this section so the location requirements are clear.

Concern #1 – EPA’s proposal requires that many canisters be dedicated to each facility. We estimate that a significant number of canisters (a minimum of 44 and in some cases at least 50) will be required to be dedicated to our member’s impacted sites with the proposed 5-day sampling frequency as explained below once the monitoring program is started:

- One set of canisters in the field (10 canisters)
- Another set of canisters being shipped to the site for the next round of sampling (10 canisters)
- Another set of canisters being analyzed at the lab (10 canisters)
- Another set of canisters being cleaned and certified clean at the lab (10 canisters)
- Another set of canisters being taken out of the rotation every 6 months in order to conduct the required zero air verification, low level standard verification, and subsequent cleaning required by proposed Method 327 (10 canisters)

One of our members estimates that four to six of their sites will need to conduct monitoring using Method 327. Thus, an external lab will have to dedicate 200 to 300 canisters to one company alone. When considering other companies and sites that also must do this level of monitoring, this level of canister usage and demand is sure to create a strain across the country and for the sites, canister suppliers, and commercial labs who will be supporting these monitoring programs. Assuming EPA’s projection that 46 facilities will be required to perform canister sampling, 2,000 to 2,300 canisters will be required nation-wide for each sampling event, not accounting for the additional facilities that use, produce, or store, but did not report emissions of the pollutants in the 2017 NEI (and therefore are not included in EPA’s counts), nor facilities outside the HON source category that also require canisters for ambient monitoring. Thus, EPA should re-evaluate the frequency and number of canisters required for this program.

Concern #2 – EPA’s proposal in 63.184(b)(2)(ii) regarding sampling frequency specifies that the frequency of sample collection must be once every 5 calendar days, such that the beginning of each sampling period begins approximately 120 hours (± 6 hours) from the end of the previous sample.

This regulatory text does not align with a five-day frequency as the sampling time itself is 24 hours. Thus, 120 hours from the end of the previous sample would have the next canister starting about 144 hours from the beginning of the previous sample. Thus, the regulatory text should read "begins approximately 96 hours (+ 6 hours) from the end of the previous sample."[108]

We are also concerned about the ± 6-hour criteria. During the 7 weeks of sampling associated with the 2022 Section 114 Request one of our members encountered delays due to weather events such as heavy rains and/or thunderstorms which delayed monitoring personnel being able to deploy the canisters. In some cases, the company had to delay deployment of the canisters up to one entire day. We propose that EPA strike the reference to a ± 6 hour window for deploying the next set of canisters from the rule text. Again, our recommendation is a monitoring frequency of every 14 calendar days with the same allowance for a 13 to 15 calendar day sampling period like the sorbent tube monitoring program.

Concern #3 – Monitoring on a five-day frequency also presents significant logistical challenges for site and contractor personnel and the off-site labs who are required to analyze each canister within 7 days from the time the sample was collected based on allowable holding times. In several cases, the canister monitoring will need to commence on weekends and/or be retrieved on weekends or holidays, and the canisters will need to be express shipped to external labs for analysis. An example is shown below:

- Monitoring Event #1 – Starts on Monday at 2 PM; Ends at 2PM on Saturday. The canisters would then need to be express shipped to the external lab on Saturday afternoon. The lab, if express shipping is available, would receive the samples on Sunday and would have 7 days from Sunday to analyze the samples.

Deploying canisters and/or retrieving them on weekends places a significant strain on contractors who will be trained to do this work as they typically must drive to member sites, follow all requirements in the new Method 327, and then work to deploy or retrieve nine separate canisters plus the field blank. We are concerned that external contractors may not be able to provide ample staff to maintain an on-going monitoring program that requires work on weekends and holidays for an infinite period of time.

In addition to all of these concerns, EPA proposes that the owner/operator then change the location of the canister locations depending on the length of the monitoring perimeter. Consistent

[108] We are proposing that EPA finalize the rule to require a 14 calendar day (i.e., 2-week) sampling frequency though.

monitoring locations are integral to determining the potential sources of elevated readings and determining the effectiveness of potential correction actions. Also, continually changing the sampling locations is sure to cause confusion over time, may result in access to sample location issues on weekends and holidays, and should not be part of a long-term monitoring program.

In short, if EPA moves forward with fenceline monitoring, EPA should finalize the HON rule with a requirement for monitoring on a two-week frequency using a maximum of six fixed canister locations. If EPA rejects this suggestion, EPA should not require sampling more frequently than once every 7 days. By requiring a 7-day sampling frequency instead of 5, facilities will be able to coordinate sample canister deployment, collection, and/or sample shipping with sampling conducted under §63.184(a), reducing the number of separate instances a facility technician or potential third-party contractor is required to traverse the facility fenceline. A 7-day sampling frequency would also avoid deployment and collection of sample canisters on weekends when staff availability is more limited and result in an almost 30% reduction in cost.

5.1.9 EPA Must Revise the Ethylene Oxide Action Level to Account for Measurement Imprecision.

At §63.184(d)(3)(iv), EPA proposes an action level of three times the RDL, or 0.2 micrograms per cubic meter (μg/m^3) for EO. As presented by EPA in Table 6 of the technical supporting documentation for EPA's fenceline monitoring analysis, the average monitoring concentration for all but one facility is below 1 μg/m^3; however, an action level of 0.20 μg/m^3 is unworkable and will lead to a search for emission that do not exist due to the measurement imprecision at such a low concentration. Based on a review of fenceline monitoring data collected in response to EPA's January 18, 2022 ICR, we identified 86 duplicate sample pairs for EO. Of those 86 pairs, 12 (or 14%) had an absolute difference of two times the RDL or more, and 11 pairs (13%) had an absolute difference of three times the RDL or more. This means that approximately 1 in 10 sampling events could show an exceedance of the action level as a result of measurement imprecision alone. Furthermore, excluding the highest value (168%), the average duplicate precision or relative percent difference (RPD) for measurement pairs with an average between 0.20 μg/m^3 and 0.75 μg/m^3 was 34%.

EPA, state agencies, and laboratories have identified several possible reasons for the method uncertainty identified in the data above. These include method sensitivity (i.e., a method detection limit above the target measurement range), measurement specificity, or chromatographic co-elution of analytes with EO, degradation of calibration standards, leaks in sampling equipment, and EO canister effect (the formation or growth of EO in clean canisters). In a study conducted by the Georgia Environmental Protection Division, over 30% of the samples were identified as potentially biased by EO growth in the sampling canisters.[109] EPA has acknowledged the canister growth issue and has indicated that silicon-ceramic coated canisters are less susceptible, but not completely immune to EO growth.[110]

A RPD difference of 34% means that a measured value of 0.6 µg/m^3 may vary by as much as the proposed action level due to method uncertainty alone, making such a low action level meaningless in an effort to measure and reduce emissions of EO. The available data indicate that an action level of three times the RDL would result in several instances of facilities conducting root cause analyses and corrective actions (RCA/CA) not because of any actual excess emissions, but because of method uncertainty. EPA assumes that the new proposed Method 327 will resolve existing concerns with accurately measuring EO at very low concentrations (especially in the < 1 ug/m3 concentration range). EPA also assumes that the proposed regulatory requirements will result in regulated entities being able to easily demonstrate that their annual average Δc values will be less than 0.2 ug/m^3. Both assumptions are leaps of faith at best, given that no Method 327 dataset of a reasonable size exists to validate any presumed resolutions of method uncertainty, nor will facilities have an opportunity to collect such a dataset prior to the effective date of the rule (see our comments below on the impracticability of EPA's proposed timeline to implement fenceline monitoring). The proposed regulation and action level for EO places all sites in a predicament of having to make multiple large capital investments to meet the proposed EO emission standards and then not having any assurance the annual average Δc value will be at or below the action level in the year 2027.

EPA's proposed Method 327 indicates in section 9.4.2:

> *9.4.2 Replicate Analysis. The level of agreement between replicate samples is a measure of precision achievable for the analysis. Analyze at least one replicate analysis for each set of field-collected samples. The RPD of the precision measurements should agree within ± 25% when both measurements are ≥ 5 times the MDL. Flag associated results to indicate if the RPD indicates poor method precision.*

Thus, at a value of five times the RDL, or approximately 0.34 µg/m^3, the acceptable difference between duplicate samples is 0.085 µg/m^3 or less; however, as stated above, the duplicate data

[109] *See* Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch. "Ethylene Oxide Monitoring Report." May 12, 2022. Available: https://epd.georgia.gov/ethylene-oxide-information.
[109] Available: https://www.epa.gov/amtic/amtic-ambient-monitoring-archive-haps.
[110] *See* Effect of Canister Type on Background Ethylene Oxide Concentration. Memorandum from Lara Phelps, Director Air Methods and Characterization Division, Center for Environmental Measurement and Modeling to Richard Wayland, Director, Air Quality Assessment Division, Office of Air Quality Planning and Standards. Available: https://www.epa.gov/sites/default/files/2021-05/documents/ord-EO-canister-background-memo-05072021.pdf

available for EO demonstrate that even at a level of five times the RDL, measurement imprecision is too high to yield actionable results.

Based on a review of the duplicate data, we recommend EPA, at a minimum, set an action level of at least 0.75 µg/m^3 (however; refer to Section 5.1.10 where we recommend a value of 1.0 µg/m^3 to address background EO concentrations). At 0.75 µg/m^3 and above, the average duplicate precision drops to 13% when the highest value (170%) is excluded. Furthermore, 10 out of 13 duplicate pairs with an average value of greater than 0.75 µg/m^3 had a duplicate precision of 7% or less. An action level of at least 0.75 µg/m^3 would result in fewer unnecessary expenditures of resources in an attempt to identify excess emissions that potentially do not exist.

An action level of at least 0.75 µg/m^3 would also address instances of EO found in field blanks. Of the 36 field blanks, 18 (or 50%) had detectable levels of EO. These detectable levels ranged from 0.017 µg/m^3 to 0.24 µg/m^3, with an average of 0.10 µg/m^3, or 50% of EPA's proposed action level of 0.20 µg/m^3. An action level of 0.20 µg/m^3 is not a meaningful value when half of the difference in concentration between two samples could readily be attributed to the amount of EO routinely found in field blanks.

5.1.10 The Action Levels for Ethylene Oxide and the Other Five Target Analytes, and the Fenceline Monitoring Requirements Otherwise Must Appropriately Account for Background Concentrations of Ethylene Oxide.

In addition to measurement imprecision, our members are concerned about the impacts of background levels of EO and the other target analytes in samples collected as part of their fenceline monitoring programs. We are also concerned about the methodology used to handle non-detect sampling results and the inability of facilities to account for onsite sources that are not subject to emissions standards under the HON and P&R I. We request that EPA increase the proposed action levels of EO and the other target analytes to reflect variability observed in collected background data, revise the provisions related to handling of non-detects, and incorporate provisions into the final rule that allow for accounting of onsite sources that are not subject to emissions standards under HON.

Specifically regarding EO, in order to understand the potential impacts of background levels of EO on fenceline monitoring programs, we reviewed background EO concentration data available from two studies conducted by state agencies. In the first study[111], the Georgia Department of Natural Resources Environmental Production Division (GAEPD) setup EO monitors near known emitters in addition to areas designated as "background" locations away from any known emitters

[111] *See* Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch. "Ethylene Oxide Monitoring Report." May 12, 2022. Available: https://epd.georgia.gov/ethylene-oxide-information.

of EO. We obtained year 2020 concentration data for one of the background monitors located in South DeKalb from EPA's Ambient Monitoring Archive for Hazardous Air Pollutants[112] and analyzed the maximum and minimum individual concentration value reported each month of the year. These background concentrations ranged from a low of 0.10 $\mu g/m^3$ to a high of 3.7 $\mu g/m^3$. We also noted that the monthly difference between the highest and lowest reported concentration value ranged from 0.22 $\mu g/m^3$ to 3.2 $\mu g/m^3$, with an average monthly difference of 0.88 $\mu g/m^3$.

We also reviewed background concentration data for EO collected by the West Virginia Department of Environmental Protection (WVDEP) as part of the Department's fenceline monitoring project in the Kanawha Valley. The Department collected background concentration data in Guthrie and Buffalo, West Virginia. From January to July 2022, 11 background measurements were made in Guthrie that ranged from 0.059 $\mu g/m^3$ to 1.74 $\mu g/m^3$. From April to July of 2022, background concentration measurements at the Buffalo sample location ranged from 0.20 $\mu g/m^3$ to 1.31 $\mu g/m^3$.

In reports published by both GAEPD and WVDEP, each agency indicated that in certain instances the measured background concentrations were greater than those measured at sampling locations near industrial sources of EO. Each agency stated that this suggests there are potentially other sources of EO than just industrial emissions.[111,113]

Each set of measurements described above indicates that background concentrations of EO can vary significantly, including up to more than an order of magnitude greater than EPA's proposed action level of 0.20 $\mu g/m^3$. To mitigate the influence of variable background concentrations, the Associations request EPA set the proposed action level at 1 $\mu g/m^3$. Based on the ranges above, an action level of 1 $\mu g/m^3$ would help avoid false positives when the highest measured concentration is still within the typical background level.

Also related to background concentration, we are concerned about how EPA proposes to handle non-detect sample results. At §63.184(d), EPA proposes the following procedures to calculate the facility impact on the concentration (Δc):

> *(A) If the lowest detected value of a compound is below detection, the owner or operator must use zero as the lowest sample result when calculating Δc.*

---

[112] Available: https://www.epa.gov/amtic/amtic-ambient-monitoring-archive-haps. We analyzed data for AMA site code 130890002.

[113] *See* West Virginia Department of Environmental Protection. Ethylene Oxide Monitoring – Characterization of South Charleston and Institute, West Virginia and Surrounding Areas. February 21, 2023. Available: https://dep.wv.gov/key-issues/Documents/EO/Final%20Report/Final%20Report%20Body%202-21-2023.pdf

> *(B) If all sample results are below the method detection limit, the owner or operator must use the highest method detection limit for the sample set as the highest sample result and zero as the lowest sample result when calculating Δc.*
> *(C) In the case of co-located samples, if one sample is above the method detection limit while the other sample is below the method detection limit, the owner or operator must use the method detection limit as the result for the sample that is below the method detection limit for purposes of averaging the results to determine the concentration at a particular sampling location, and, if applicable, for determining Δc.*

Paragraph (A) should be corrected to read "If the minimum sample result for a compound is below the method detection limit." The paragraph as written appears erroneous because a detected value cannot be below the method detection limit: if the sample result were below the detection limit, the result would be considered "non-detect." However, EPA's proposed treatment of non-detect values [i.e., assignment of a zero value in paragraphs (A) and (B)] is inappropriate. If a sample result is below the detection limit, that result should be assigned the method detection limit for purposes of determining Δc. As EPA states:

> *The method detection limit is the lowest concentration that can be reliably detected by a specific method.*[114]

Thus, a value below the method detection limit does not indicate the compound is not present in the sample, rather, that the compound is not present at a detectable concentration. Therefore, requiring facilities to assign non-detect results a value of zero will potentially overstate Δc. In the context of EO, where all sample results were flagged as non-detect, EPA's proposed calculation procedure will result in an overstatement of Δc by 33% of the action level. A requirement to treat non-detect values as zero along with an impracticably low action level at a concentration where ICR sampling data available to EPA indicate a widely varying field precision, in some cases up to and beyond 60%, will likely result in triggering corrective action requirements when no excess emissions have actually occurred. Assigning a zero value is also inappropriate given the reasonable assumption that if a site uses, produces, or stores any of the target compounds the ambient background concentration of those compounds around the site is not zero. We request EPA revise the proposed requirements at §63.184(d) to use the method detection limit in the Δc calculation for any value reported as non-detect.

The Associations support EPA's proposal to allow facilities to account for offsite, upwind sources through the use of near-field source correction under §63.184(g). EPA points out, as the Agency

[114] EPA-HQ-OAR-2022-0730-0091 page 25 of 75.

has done before,[115] that off-site sources can contribute to a facility's fenceline concentration of common pollutants and a facility likely has no control over the contribution from sources it does not own or operate. This scenario is a likely occurrence for several of our members with facilities located in large manufacturing complexes where fence lines are shared by separate entities. However, we disagree with EPA's assertion that this option should not be provided for on-site, non-source category emissions.[116] As stated in our previous comments at the beginning of this Section, EPA cannot regulate sources beyond those subject to the technology review. Thus, the Associations request that EPA add provisions in the final rule similar to those at §63.658 to address on-site sources that are not part of the affected source under HON and P&R I. The Associations additionally request that EPA allow the use of real-time VOC detection methods combined with meteorological data to adjust the mass fraction of the specific constituents measured using the passive samplers as part of an SSMP, similar to that promulgated in a state monitoring program administered by Colorado Department of Public Health & Environment.[117] This adjustment mechanism provides a more economically feasible option to adjust for near-field impacts than the installation of multiple GCMS equipment along the fencelines.

5.1.11 EPA's Proposed Ethylene Oxide Action Level Will Result in Unnecessary Root Cause Analyses, for which Costs Have Not Been Evaluated by EPA.

For reasons explained above, an EO action level of 0.20 µg/m^3 is impracticable due to limitations on industry and analytical laboratories' ability to accurately measure EO concentration levels this low in the context of a fenceline monitoring program, in addition to influences from background levels of EO and the inability of facilities to appropriately account for non-detect sample results and on-site emissions sources that are not part of the affected source under the HON and P&R I. Given these shortcomings of EPA's proposed approach, we predict that facilities that use, produce, store, or emit EO will have multiple exceedances of the annual average action level for EO that are not a result of emissions within the facilities' control. EPA has not accounted for the RCA/CA costs associated with these events in their impacts analysis[118], nor has the Agency accounted for RCA/CA costs or the costs associated with reducing emissions in general. Consideration of these additional costs only further support ACC's position that the proposed fenceline monitoring

---

[115] In the June 30, 2014 proposed rule for the Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, EPA acknowledged that background levels from upwind sources can be "spatially variable" and that these upwind sources can cause different background levels on different sides of the facility (79 Fed. Reg. at 36924).
[116] 88 Fed. Reg. 25145.
[117] *See* Monitoring Programs at https://cdphe.colorado.gov/air-toxics-act.
[118] EPA has previously assigned a cost of $5,000 to each RCA analysis. See "Technical Memorandum – Flare Control Option Impacts for Final Refinery Sector Rule," page 4 (EPA-HQ-OAR-2020-0682-0748). We note, however, that the actual cost of a RCA will likely far exceed $5,000 given the effort involved to identify the source of such small amounts of emissions that will contribute to the exceedance of the low action levels proposed by EPA.

requirements are not a cost-effective under CAA Section 112(d)(6), nor at they a cost-effective option in consideration of an ample margin of safety under CAA Section 112(f).

5.1.12 EPA Must Clarify Why an On-Site Meteorological Station is Required for Ethylene Oxide and/or Chloroprene Monitoring or Remove the Requirement.

Proposed §63.184(c) requires facilities to implement an on-site meteorological station if required to conduct fenceline monitoring for EO or chloroprene. There is not sufficient justification to require this additional monitoring solely because a facility is required to monitor either of these two compounds. Unless a facility is using near-field source correction or an alternative test method, the proposed provisions to determine Δc in §63.184(d) or respond to an exceedance in §63.184(e) do not include a requirement to assess or include meteorological data. While facilities may reference meteorological data as part of their root cause analysis, EPA has not explained why data from a nearby National Weather Service (NWS) meteorological station would be insufficient for these purposes. To eliminate unnecessary burden, we request EPA remove the phrase "If monitoring is conducted under paragraph (b) of this section" from proposed §63.184(c)(1).

5.1.13 The Associations Support a Pathway for Facilities to use Other Types of Monitoring Networks Through a Request for Alternative Test Methods Under §63.7(f) with Revisions.

Our members are concerned about the possibility of exceeding the proposed action levels due to near field sources. Part of the concern originates from the time-integrated nature of passive sampling and the inability to determine when, in relation to meteorological data, a high-concentration air mass passed by the sampler. For example, if an off-site source was located to the south-east of a facility with a monitoring program, and the wind direction shifted from west to south for a few hours during the day, the monitor on the east side of the facility would likely collect EO from the off-site source, though without additional properly sited monitors, facilities would be generally unable to correlate the high concentration with wind direction. Although we support EPA's proposed inclusion of provisions to account for upwind sources under §63.184(g), the situation is complicated when there are several off-site sources of a target compound surrounding a facility, such as the case at several of ACC's member facilities located in chemical complexes. To account for these off-site sources would require a vast array of additional monitors that in some cases could not be located in appropriate sampling locations due to differing property owners, safe access, and security.

One potential solution is to allow facilities to use alternative "real-time" monitoring technology instead of time-integrated sampling techniques. Our members are currently investigating real-time fenceline monitoring approaches for target compounds and may prefer to implement these solutions instead of additional monitoring locations. Thus, we support EPA's proposal that facilities may submit a request for the use of an alternative test method at §63.184(i); however, we do not support the requirement at §63.184(i)(3) that the MDL must nominally be at least an order of magnitude (10 times) below the action level for the monitored compounds. This approach arbitrarily limits flexibility for both the regulated community and the agency via the alternative monitoring approval process without an environmental benefit. Action levels should be decoupled from the testing method to allow appropriate and technically sound methods.

EPA has put forth a requirement that is not met under the proposed standard by requiring a ten fold reduction in the MDL for alternative test methods. The proposed action levels for EO and chloroprene are three times the RDL for each compound. According to EPA's technical memorandum, three times the RDL represents the level where a test method performs with acceptable precision (although, as stated earlier, we recommend EPA increase the multiplier to 5 for EO for consistency with proposed Method EPA 327). We acknowledge EPA's concern that data collected as part of a fenceline monitoring program should not be significantly impacted by detection limits; however, EPA should not promulgate a requirement so restrictive as to potentially eliminate the flexibility of real-time monitoring because the method detection limit was only five times lower than an already very low action level. We recommend EPA revise the language at §63.184(i)(3) to require methodologies with detection limits at or below those of the reference standard (i.e., EPA Method 325A/B EPA Method 327). Such a revision would promote adoption of technologies that are as sensitive as EPA's proposed methods without unnecessarily restricting new technologies based on sensitivity. Such revision would make the rule consistent with EPA's obligations to approve alternative methods will achieve a reduction "at least equivalent" to the reductions required by the regulatory work practice. *See* 112(h)(3).

5.1.14 The Language in §63.184(e)(4) Should be Revised to Allow a Full Sampling Period Following Completion of Initial Corrective Action

The associations request EPA revise the language in proposed §63.184(e)(4) such that a new root cause analysis and corrective action plan are required if the Δc for the subsequent sampling period that begins <u>*after*</u> the completion of the initial corrective action is above the values presented in §63.184(e)(4)(i) through (vi). As currently written, the proposed provision in paragraph (e)(4) would require facilities to take additional action if, for example, a corrective action was completed on day 13 of a 14-day sampling period and the result for that period was above the action level. EPA appears to have identified this issue based on the language in §63.184(f)(1) and (2), e.g.:

> *(f)(1) ...the Δc value for the next sampling period, <u>for which the sampling start time begins after the completion of the initial corrective actions</u>...*

(Emphasis added). We request EPA revise the language in proposed §63.184(e)(4) for consistency with §63.184(f)(1) and (2) regarding which sampling period value triggers additional action to avoid additional unnecessary root cause analyses.

5.1.15 The Fenceline Monitoring Provisions Should Include Delay-of-Repair Provisions

The proposed revisions in §63.184(e)(3) state that initial corrective actions must be taken no later than 45 days after determining there is an exceedance of an action level. Our members anticipate that in certain instances, appropriate corrective actions will require shutting down a process unit (e.g., to replace a leaking valve that cannot be repaired online, or to perform hot-work on equipment with explosion/flammability potential). As written, §63.184(e)(3) does not allow for any delay beyond 45 days to complete initial corrective action. Thus, to comply with the standards as proposed, facilities may be required to perform unplanned shutdowns which result in additional emissions from purging equipment and opening maintenance vents. Unplanned shutdowns also present a safety risk to facility personnel as shutting down and starting up equipment is a complicated process that often involves multiple facility personnel following non-routine procedures. Planned shutdowns typically require extensive planning to ensure the safety of personnel and to maintain integrity of process equipment. Unplanned shutdowns add an additional opportunity for injury or equipment damage given the limited time-frame available for planning and coordination. Furthermore, the requirements as written may require a process unit shutdown just days or weeks before a planned outage and thus result in additional emissions from purging and opening equipment just prior to a scheduled event. To address these scenarios, We request EPA include delay of repair type provisions that would allow facilities the option of addressing the root cause of an exceedance during the next planned shutdown if, based on the results of the root cause analysis, the facility determines the only feasible action to address emissions requires a process unit shutdown.

5.1.16 The Fenceline Monitoring Provisions Should Include an Avenue for Reduced Sampling as a Result of Good Performance

If EPA revises its analysis and determines that fenceline monitoring requirements are justified under either CAA Section 112(d)(6) or 112(f), we request EPA incorporate provisions in the final rule that allow for reduced sampling frequency based on a history of good performance. EPA estimates a total annualized cost of over $33 million per year for sampling and analysis, excluding any costs for RCA/CA; however, no provision is provided for facilities that routinely measure and report fenceline concentrations below the proposed action level to reduce sampling frequency. Because EPA has not demonstrated that fenceline monitoring requirements are necessary to reduce risk below the presumptively acceptable level, nor are they necessary to provide an ample margin of safety, we request EPA incorporate provisions similar to those at §63.168 for valves and §63.174

for connectors that allow for a reduced monitoring frequency based on good performance[119]. For example, EPA should allow for a reduction in the monitoring frequency if the annual average Δc (biweekly concentration difference) for each monitored compound, calculated as specified in §63.184(d)(2), is less than 50% of the action level for the compound specified in §63.184(d)(3) after one year of the monitoring program or if the concentration of the chemical of concern is less than 10% of the action level for the compound for a two-year period. Such a change would encourage facilities to take additional measures to reduce emissions, while lowering the overall costs for fenceline monitoring programs.

Furthermore, EPA should establish criteria/process steps that would allow the owner or operator to stop the fenceline monitoring program (e.g., if the chemical usage, production, or storage of the chemicals of concern in HON CMPUs at the source becomes less than 25,000 pounds per year and/or if the air emissions of the chemical of concern from the HON CMPUs at the source falls below 1 ton per year or less). At a minimum, if *de minimis* applicability thresholds are not included in the final rule, sources should be allowed to discontinue fenceline monitoring if they have a certain number of non-detect concentrations over a period of time, as the facility will not be driving emissions of the monitored HAP and this type of requirement would be consistent with many facility consent decrees that include fenceline monitoring. As noted by the Air Advocacy Coalition ("A2C") in their comments on the proposed rule, a significant fraction of the analyzed two-week sampling periods had ΔCs less than or equal to 2 μg/m^3. As further described by A2C, the majority of the elevated concentrations above the trigger level were one-time events or scenarios which once corrected remained corrected and unrepeated. Thus, we suggest that EPA propose some criteria by which the owner/operator can either stop the fenceline monitoring or reduce the monitoring frequency to monthly, quarterly, or longer frequencies potentially. EPA should not establish a once-in-always-in approach for the fenceline monitoring program(s) with no adjustments to the monitoring frequency or no off-ramp.

5.1.17 The Reporting Requirement in §63.182(e)(7) Should be Revised.

The proposed reporting requirement in §63.182(e)(7) reads as follows:

> *The biweekly concentration difference (Δc) for each monitored compound for each sampling period and the annual average Δc for each monitored compound for each sampling period.*

[119] The associations are not suggesting that skip periods are inappropriate when a regulation is promulgated under 112(f), only that the issue of unacceptable risk does not exist as part of the technology review and thus provides no support of not permitting delay of repair.

This requirement does not correspond with the 5-day sampling period EPA proposes for EO and vinyl chloride at §63.184(b)(2)(ii). The Associations recommend removal of the term “biweekly” so that the reporting requirement covers both the 14-day and 5-day sampling frequencies proposed at §63.184(a) and (b).

5.1.18 Three Years are Needed to Comply with the Fenceline Monitoring Provisions.

Proposed §63.184 references proposed §63.100(k)(12) in Subpart F. §63.100(k)(12) requires that owners/operators commence fenceline monitoring program(s) within 1 year of the date of publication of the final rule in the Federal Register, and also proposes that requirements for corrective actions are not required until on or 3 years after the date of publication of the final rule in the Federal Register.

The compliance date for commencing the fenceline monitoring program(s) should be adjusted to 3 years after the effective date of the final rule. We also suggest that the requirements for corrective actions should not be required until on or after 4 years after the effective date of the final rule.

This additional year of time to implement a fenceline monitoring program or perhaps multiple fenceline monitoring programs must be provided to regulated entities because there are several steps involved before commencing such a program. Some of the key steps are outlined below:

- Reading and assessing the final rule and EPA’s response to comments to fully understand the new monitoring requirements;
- Selection of a contractor or perhaps multiple contractors to determine the initial sampling locations and to set and retrieve sample tubes or sample canisters on the required frequencies over an extended period. Typically, our members will solicit competitive bids from multiple contractors. Then, a contractor is selected and a contract with the service provider is established. This step can take several months to complete.
- Selection of a laboratory or perhaps multiple laboratories to analyze the sorbent tubes or sample canisters. Typically, our members would solicit competitive bids from multiple labs. Then, a lab(s) is/are selected and a contract with the service provider is established. This step can also take several months to complete. We are also anticipating significant problems with labs being able to manage the high volume of sampling canisters that will be required for our member’s sites as at least 10 sampling canisters will be needed (8 canisters, 1 duplicate canister, and 1 field blank) every 5 days at some of our member’s locations. Refer our comments above for our discussion on the anticipated number of canisters required.
- Time will be required for the coated canister and the canister sampling flow controllers supply chains to ramp up production of the additional 2,300 plus canisters.
- Time will be required for laboratories to expand capacity for analysis and canister handling (cleaning, testing, shipping, etc.)

- Our current understanding is that there are no labs that follow all of the requirements in the proposed Method 327 for conducting the canister sampling programs. We cover some of the key concerns with the proposed method later in these comments. Thus, EPA will have to make some changes to the proposed method before it can be implemented in the field and by the labs.
- Preparing multiple sampling and analysis plans and then completing the work to determine the monitoring perimeter for each impacted site, and then to determine the exact monitoring locations for these programs.

Additionally, we expect several facilities will need to develop and submit site-specific monitoring plans to account for offsite upwind sources to be excluded from monitoring requirements. As opposed to refineries which were allowed 2 years to begin their fenceline monitoring programs,[120] several of our members will be required to perform fenceline monitoring for multiple pollutants. This will further complicate site-specific monitoring plans because of the need to address different chemicals from differing facilities due to proximity of nearby sources. Furthermore, we note that EPA's underestimates the counts of monitored compounds for several facilities in their supporting documentation. Our member companies report that multiple sites EPA identifies as having to monitor for a single compound will be required to monitor for multiple compounds based on EPA's proposed applicability criteria.

Siting offsite monitors will likely be a lengthy process as a result of the need to identify representative, accessible, and secure monitoring locations and obtain permission from the property owner to both place and routinely access the monitor, prior to submission of a site-specific monitoring plan. Facilities also indicate they will be required to make physical improvements to their fence lines to be able to site monitors. These improvements will include construction of access roads, physical fencing, and potential drainage improvements, all of which may require additional permitting and approval according to local jurisdiction. Such facilities will additionally require time for standard approvals of capital expenditures.

The Associations are also concerned about the near-term availability of silicon-ceramic lined canisters[121] and the time required for site personnel, contractors, and laboratories to familiarize themselves with a new and unproven method. Our discussions with laboratory representatives indicate that labs will be required to purchase, install, and validate additional equipment such as cleaning ovens, air concentrators, auto samplers, and gas chromatography/mass spectrometry

---

[120] Refer to 40 CFR Part 63, Subpart CC. Additionally, see 80 Fed. Reg. 75186.
[121] *See* Effect of Canister Type on Background Ethylene Oxide Concentration. Memorandum from Lara Phelps, Director Air Methods and Characterization Division, Center for Environmental Measurement and Modeling to Richard Wayland, Director, Air Quality Assessment Division, Office of Air Quality Planning and Standards. Available: https://www.epa.gov/sites/default/files/2021-05/documents/ord-EO-canister-background-memo-05072021.pdf

instruments to handle the expected sampling increase. The purchase and installation of the new equipment is expected to take an additional six to nine months. And our members expect they will be required to hire and train additional staff and/or contractors to implement the sampling program and perform the associated data analysis and RCA/CA.

In summary, one year to establish fenceline monitoring programs at multiple sites for multiple compounds is not enough time to implement all of the program's tasks. Three years should be allotted for implementation of the program with RCA/CA being required in year four.

5.1.19 Comments on Costs of the Proposed Monitoring Program.

EPA's proposal places a new significant long-term cost on owners and operators. We are very concerned about the estimated costs of conducting fenceline monitoring on a long-term basis per EPA's proposed Method 327. We are aware that our member company Dow is providing information on the estimated cost of the Method 327 canister monitoring program in their comments and we reiterate that information here in our request that EPA make adjustments to the number of canisters required per sampling episode and the frequency of monitoring episodes. The proposed rule is unsustainable from a cost perspective and requires more sampling than is necessary to provide adequate information regarding fenceline concentrations of target compounds.

During the year 2022, Dow conducted a Summa canister monitoring program for seven weeks at six of their facilities in response to EPA's Section 114 request. Dow compiled extensive information on the costs of operating the required program (7 weeks of monitoring, 6 monitoring locations with 1 duplicate and some field blanks). Four of their facilities that conducted the monitoring have CMPUs that are subject to the HON rule and the costs to conduct these programs are summarized in the column titled: "Estimated Annual Cost of 73 Episode Program" of the table below:

Site	Cost of 7 Week Episode Program	Estimated Annual Cost of 73 Episode Program
Site 1	$57,841	$603,199
Site 2	$59,962	$625,318
Site 3	$56,754	$591,863
Site 4	$57,599	$600,675
All 4 Sites		$2,421,055

The above cost estimates are based on 6 canisters with 1 duplicate and some field blanks. EPA's proposed rule requires 8 canisters with 1 duplicate and 1 field blank per sampling episode.

However, the 7-week monitoring costs have been scaled to annual monitoring costs by dividing the cost of the 7-episode program by 7 and then multiplying the per episode cost by 73. Thus, Dow projects the annual cost of conducting the proposed monitoring program will exceed $2,500,000 per year as additional canisters will be required to be used and analyzed. Since this is long-term proposed sampling program, Dow estimates that the monitoring costs will be $25,000,000 over the course of a decade. Again, we comment that these anticipated costs are excessive and we would like to work with EPA on a monitoring approach that is more cost effective and still provides the necessary information. This is especially the case as this is only for the monitoring part of the program, which by itself obtains no emission reductions.

5.1.20 Comments on Proposed Method 327.

The following comments are based on input from our member companies following their review of EPA's proposed Method 327 and based on discussions with analytical laboratory representatives. The comments below are organized by method section.

Comment on Section 6.5.1. of Method 327

> *6.5.1 Field Pressure Measurement Gauge. A vacuum/pressure gauge or pressure transducer with an accuracy of ± 0.25% full scale calibrated over the range of use for the application with sufficient resolution to permit precise measurement of pressure differentials must be used for field sampling purposes. The accuracy of the vacuum gauge must be measured verified on an annual basis against a National Institute of Standards and Technology (NIST)-certified standard.*

We are concerned that the accuracy requirements of within ± 0.25% full scale may not be feasible for a field pressure management gauge. A complete vacuum would be a pressure of 0 psia or -14.696 psig. Thus, the field pressure management gauge would be required to have an accuracy of ± 0.0025 * 14.696 psia which is ~ within ± 0.037 psia or within ±~ 2 mmHg. EPA should not require a field pressure management gauge to meet a pressure measurement accuracy with such a small range. A simpler field read pressure gauge which measures the vacuum in inches of Hg should be sufficient for confirming that the canister is under near full vacuum at the start of the sampling event and under a slight vacuum at the end of the 24-hour sampling event.

Comment on Section 8.1.2 of Method 327

In Section 3.10, EPA defines a Mechanical Flow Controlling Device (MFCD) as a device that is used to ensure constant flow to an evacuated canister to near ambient pressure. MCFD's are designed to maintain a constant pressure drop (and thus a constant flow rate) across a restrictive orifice by allowing a constant leak rate of sample into the canister as the canister vacuum decreases to near ambient pressure without power. The Associations agree with this definition and the concept of using a MCFD.

In Section 8.1.3.1, EPA requires that one install the sampling device on an evacuated canister equipped with a MFCD and tightly cap the inlet to the sampling device. Thus, Method 327 itself requires the use of device which will maintain a constant flow across a restrictive orifice.

However, in Section 8.1.2, EPA proposes a flow control check prior to and after each field sampling event. We believe that these requirements will be very difficult and perhaps impossible to meet for the following reasons:

Section 8.1.2.2 requires that the flow controller be attached to a separate canister and allow sufficient time for the system to stabilize and record the flowrate upstream of the flow control device for a total of three additional flow rate measurements. Then, Section 8.1.2.3 requires that the flow check is considered valid if within ± 10% of the reference flow rate. We have concerns about this requirement as the flow controller is designed to collect a sample volume of approximately 5 liters or 5,000 mL over a 24-hour period (assuming the 6L canisters is not completely filled with ambient air). Thus, the flowrate is approximately 5000 mL/1,440 minutes = 3.47 mL per minute. Thus, to be within 10% of the reference flowrate, the technician must prove that the flow controller is accurate to within ± 0.347 ml per minute, which we believe may not be possible to do with a field measurement. Also, the additional time to conduct these additional flow tests must be considered and will delay the time between when canisters 1,2,3 etc. can be placed into service by the sampling crew.

Further complicating the work in the field, Section 8.7.3.1 requires that all sampling locations must initiate sampling within 60 minutes of each other. Since the method requires the use of 8 canisters plus a duplicate, this requirement means that a sampling team would have less than 7 minutes to conduct the pre-sampling flow controller flow tests and then place each of the nine canisters in service. Our member companies' experience is that it took 15 to 20 minutes to place each canister into service for the Section 114 sampling work in 2022 given the fact that the sampling team has to travel between each monitoring site, attach the canister, record the starting vacuum, and make other records in order to place a canister into service. Thus, placing each canister into service within 60 minutes of each other is not a feasible requirement.

Furthermore, the entire flow control flow check requirement does not appear to be required as the technician can confirm relatively uniform flow into the canister through a pre-set orifice over a 24-hour period by recording the vacuum of the canister prior to the sampling event and then after the sample event. If the canister is still under a slight vacuum at the end of the sampling period, then the sample should be deemed adequate and suitable for analysis in the lab.

Given these practical concerns, we suggest that EPA delete Section 8.1.2 in its entirety and instead rely on the Flow Control Verification Test requirements in Section 8.1.1.

Comments on Section 8.3.3. and Section 8.3.4 of Method 327

External labs have expressed concerns to our member companies about the requirement to conduct a canister zero-air verification and a canister known-standard verification as prescribed in these sections every six months. EPA's TO-15A method requires such tests every 3 years. It is our understanding that each canister will have to go through this process every six months. The entire cycle takes a minimum of 16 days plus additional time to then clean each canister per Sections 8.4 and 8.5 (more likely 21 to 28 days before it can return to the sampling cycle). This presents a problem for lab suppliers in that our member companies will have to take canisters out of the sampling cycle for almost a month every six months. We suggest to EPA that the frequency of these types of checks be adjusted to a longer period of time such as a three-year period in order to be consistent with EPA's TO-15 method.

In addition, EPA should also provide some flexibility for the external labs to use purified nitrogen in Section 8.3.3.1 instead of humidified HCF zero air.

Method 325A, Section 8.4.3 states:

> *When extenuating circumstances do not permit safe deployment or retrieval of passive samplers (e.g., extreme weather, power failure), sampler placement or retrieval earlier or later than the prescribed schedule is allowed but must occur as soon as safe access to sampling sites is possible).*

The same flexibility to increase the timing of initiating or retrieving a sample if severe weather or other unsafe conditions prohibit access to fenceline monitoring equipment should be included in Method 327.

Comments on Section 8.7.2.2 of Method 327

> *8.7.2.2 Protect the canister and sampling inlets by placing the canister under shelter, if possible. Do not restrict air flow around inlets and do not locate inlets under building overhangs.*

EPA should remove this requirement from Method 327. Although possible, our member companies would like the flexibility to attach the canisters to a chain link fence or a post in the field without adding a shelter, which potentially could impact flow of ambient air to the sample location. Additionally, members with experience conducting fenceline monitoring for benzene indicate that sorbent tubes can be compromised during sever thunderstorms and it is unlikely that a shelter would have prevented the loss of the sample.

5.1.21 Root Cause and Corrective Actions.

Proposed §63.184(e)(1)(ii)(B) requires the owner or operator to employ the appropriate real-time sampling techniques (e.g., mobile GC's, optical spectroscopy instruments, or sensors within 30 days if the root cause of the exceedance has not been determined within 30 days.

Our members who have experience employing external contractors to implement such monitoring indicate that 30 days is not a realistic timeframe. Therefore, we suggest that EPA modify the rule text in this section to require use within 30 days or as soon practical as follows:

> *(B) If the owner or operator has not determined the root cause of the exceedance within 30 days of determining that the action level has been exceeded, or as soon as practical if external resources are needed to use these technologies, the owner or operator must employ the appropriate real-time techniques…*

5.1.22 EPA Should Revise the Methodology Used to Develop the Proposed Action Levels.

EPA has not provided adequate documentation of the methodology and results the Agency relied upon in establishing the proposed action levels. In their supporting documentation, EPA indicated that the Agency performed modeling for all facilities using their post-control risk modeling file inputs and selected the maximum annual average fenceline concentration (as approximated by the nearest off-site polar grid or census block receptor. Based on our review of EPA's post-control modeling file inputs, we identified multiple facilities with fugitive emissions greater than those facilities that were identified by the Agency as having the maximum annual average fenceline concentration. Furthermore, we identified at least one facility with emissions greater than any of the facilities listed in EPA's limited results table; however, this facility was not included in EPA's results table whatsoever. EPA must revise its analysis to clearly explain how the Agency arrived at the proposed action levels and justify the exclusion of any facilities that the Agency did not consider.

Additionally, we are concerned that EPA has not properly considered short-term emissions otherwise allowed by the proposed standards, such as maintenance vents and PRD releases. Short-term emissions should be modeled accurately for setting the ΔC action level thresholds. Annualizing short-term events such as maintenance vent and PRD emissions (e.g., modeling a 50-pound maintenance vent emission as 0.0057 lb/hr [50 pounds over 8760 hours] instead of 50 lb/hr) does not appropriately reflect the impact compliant emissions should have on setting the fenceline monitoring action levels.

Also, EPA indicates in the background information provided that the fenceline monitoring action level thresholds were set based on modeling emissions for facilities complying with HON requirements. However, such a modeling analysis would not include subsurface contamination that can be a legacy of practices from decades ago, often from companies that no longer own the site, including operating Superfund sites. Depending on the individual facility's situation, subsurface contamination could affect fenceline monitoring concentrations at some locations and not others resulting in potentially elevated ΔC values due to the subsurface contamination. The ΔC action level thresholds should be revisited to account for contribution by subsurface contamination and ensure that appropriate action levels are set.

5.1.23 Alternative Method ALT-122 Should be Allowed for Sources Required to Use Method 325A/B

On March 5, 2018, EPA published a Federal Register notice announcing alternative test method approval decisions under and in support of NSPS and NESHAPs between January 1, 2017 and December 31, 2017.[122] Included in this notice was an allowance for sources subject to 40 CFR Part 63 Subpart CC to use ALT-122 as an alternative for Method 325A/B. ALT-122 contains alternative approaches for the following:

- A simplified equation for temperature and pressure correction (replacing equations 12.5 and 12.6 in section 12.2 of Method 325B);
- An allowance for deployment or retrieval of passive samples beyond the required 13 to 15-calendar day range due to extenuating circumstances (such as extreme weather or power outage); and
- Clarification regarding the number of duplicate and field blank samples (to address the discrepancy between the final rule language in Subpart CC and Method 325A).

EPA has proposed similar regulatory language to Subpart CC under the HON. For example, proposed §63.184(a)(2)(ii) reads:

> *If there are 19 or fewer monitoring locations, the owner or operator must collect at least one co-located duplicate sample per sampling period and at least one field blank per*

[122] 83 Fed. Reg. 9306.

> *sampling period. If there are 20 or more monitoring locations, the owner or operator must collect at least two co-located duplicate samples per sampling period and at least one field blank per sampling period. The co-located duplicates may be collected at any of the perimeter sampling*

(We note that the end of the paragraph is incomplete in the red-line strike-out).[123] In contrast, Section 9.3.1 and 9.3.2 of Method 325A reads:

> *9.3.1 Collect at least one co-located/duplicate sample for every 10 field samples to determine precision of the measurements.*

> *9.3.2 Collect at least two field blanks sorbent samples per sampling period to ensure sample integrity associated with shipment, collection, and storage. You must use the entire sampling apparatus for field blanks including unopened sorbent tubes mounted in protective sampling hoods. The tube closures must not be removed. Field blanks must be placed in two different quadrants (e.g., 90° and 270°) and remain at the sampling location for the sampling period.*

Thus, the same discrepancy for Subpart CC will exist for the HON. In addition, the alternatives/revisions related to temperature and pressure corrections and extenuating circumstances that prevent sample deployment/collection are also applicable to HON affected sources. Furthermore, several of our members operate refineries and implement ALT-122 as part of their sampling plan. For these reasons, we request the Agency clarify that ALT-122 may be used as an alternative to the applicable sections of Methods 325A/B.

5.1.24 EPA Should Provide Additional Clarification on Fenceline Monitoring Siting Requirements

In the preamble to the final Refinery Sector Rule (RSR),[124] EPA provided several clarifications for siting monitors in response to comments received for industry including the following:

- Monitors do not need to be placed exactly on the property boundary or outside the property boundary. They may be placed within the property closer to the center of the plant as long as the monitor is still external to all potential emissions sources.
- If monitors are placed farther in from the property boundary, the owner or operator should take care to ensure, if possible, that the radial distance from the sources to the monitors is at least 50 meters. If the perimeter line of the actual placement of the

[123] EPA-HQ-OAR-2022-0730-0068, PDF pg. 711/753.
[124] 80 Fed. Reg. 75198.

monitors is closer than 50 meters to one or more sources, then the additional monitor siting requirements will apply.

- It is not necessary to place monitors along a road or other right-of-way that bisects a facility.
- If the facility is bounded by a waterway on one or more sides, then the shoreline is the facility boundary and monitors should be placed along this boundary. If the waterway bisects the facility, the waterway is considered internal to the facility and monitors are only needed at the facility perimeter.

We request that if EPA promulgates the proposed fenceline monitoring requirements, the Agency clarify in the preamble to the final rule that these same clarifications for refineries apply to HON affected sources as well.

5.1.25 EPA Should Clarify Overlap of Fenceline Monitoring Requirements with Requirements for Refineries Under 40 CFR Part 63, Subpart CC.

EPA should clarify that HON CMPUs may elect to meet the fenceline monitoring requirements of Subpart CC if the CMPU is located withing the boundary of a refinery that is subject to Subpart CC, the CMPU uses, produces, stores, or emits benzene, and the CMPU does not use, produce, store, or emit any of the other (non-benzene) target analytes of proposed § 63.184.

5.2 Heat Exchange Systems

5.2.1 The Associations Support EPA's Proposal to Allow Facilities to use Water Sampling Methods for Heat Exchange System Monitoring with Minor Revisions

At §63.104(l), EPA is proposing to revise the heat exchange monitoring system provisions for systems for which 99% by weight or more of the organic compounds that could leak into the system are water soluble and have a Henry's Law Constant less than 5.0E-6 at 25°C (atmosphere-cubic meter/mol). We request EPA revise the language at §63.104(l) to read "if 99 percent by weight or more of the organic HAP compounds that could leak…" Heat exchange systems can service multiple pieces of equipment and some equipment may not contain HAP. Furthermore, process fluid mixtures may contain both HAP and non-HAP compounds. Because the intent of the rule is to identify leaks of HAP, specifying that the threshold applies to organic HAP that could potentially leak into the system is appropriate and necessary to ensure that facilities identify and fix leaks containing HAP emissions, as required by the regulation.

5.2.2 Changes to Delay of Repair Allowance

Under the current HON standards, facilities may delay repair of a leaking heat exchange system if a shutdown is expected within the next 2 months, or if the shutdown to perform the repair would cause greater emissions than the potential emissions from delaying repair until the next shutdown of the process equipment associated with the leaking heat exchanger. EPA is proposing at §63.104 to eliminate these delay of repair options and replace them with the options in §63.104(j) that only allow delay of repair for heat exchangers that are not in EO service if the leak is below a delay of repair action level of 62 ppmv (as methane) in the stripping gas of the Modified El Paso Method, and prohibit delay of repair for heat exchangers in EO service (see §63.104(h)(6)).

EPA's proposed requirements for heat exchange system monitoring and repair are not cost-effective and therefore should not be included in the final rule. In Table 3 of the following memorandum (the heat exchange system technology review), EPA presents the costs associated with leak repair: "Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the SOCMI Source Category that are Associated with Processes Subject to HON and for Heat Exchange Systems that are Associated with Processes Subject to Group I Polymers and Resins NESHAP; and Control Option Impacts for Heat Exchange Systems that are Associated with Processes Subject to Group II Polymers and Resins NESHAP."[125] EPA's estimate is based on 60 hours of combined operator and maintenance labor to find and repair a leak ($4,060), $400 to obtain a speciated analysis, and $4,060 in materials costs for repair, totaling $8,520 per leak event.

EPA's estimate significantly underestimates the true cost associated with leak repair at many HON facilities. After identifying a leak, maintenance and operations personnel must develop a strategy and schedule to remove the leaking heat exchanger from service for the repair. This involves identifying and selecting options for bypassing the process stream from the leaking system, the amount of production turndown necessary while the heat exchanger is out of service, identifying and selecting the appropriate contract personnel, and scheduling the work so that it does not conflict with any other planned maintenance. Our members indicated that these steps alone require approximately 128 personnel hours for ethylene production facilities, and we expect a similar requirement for many HON facilities because similar engineering analyses and contractor selection processes will apply. Likewise, the same concerns apply for avoiding conflicts with other planned maintenance on nearby equipment. After the planning stage, additional costs are incurred during the actual repair. Bypassing the leaking system may involve installation of additional process piping and turndown or even shutdown of a production unit if other heat exchangers are not available to handle the process stream. To avoid a total shutdown, some facilities may rent and

[125] EPA-HQ-OAR-2022-0730-0075.

plumb temporary heat exchangers. Accessing the heat exchanger for repairs may require the rental and installation of cranes and scaffolding, in part, because many exchangers are elevated. De-heading the exchanger and performing the repair can also require specialized contracted maintenance support. These considerations do not appear to be accounted for in EPA's cost estimate. Our members indicated typical repair costs range from $200,000 to $400,000 per event, not considering lost profit due to turndown or shutdown for ethylene production units. We expect similar costs for many HON facilities.

However, if EPA does finalize the proposed requirements, the Agency should not eliminate the option that allows facilities to delay the repair if emissions from the process shutdown needed to repair the leak are greater than the potential emissions of delaying the repair until the next shutdown. This option essentially allows facilities to repair the leak with as little emissions and environmental impact as possible by requiring the facility to evaluate the emissions of a continued leak against the emissions from an entire process shutdown. By forcing facilities to repair leaks solely based on a concentration-based threshold, facilities with a smaller recirculation rate will likely emit greater amounts of HAP than if they were allowed to assess the overall mass emissions from the leak versus shutdown and choose the option that minimizes emissions. Further, EPA's calculation of emissions reductions in the heat exchange system technology review ignores emissions as a result of shutting down a process to fix a leak, biasing results to a false "cost-effective" conclusion. We request that EPA not finalize the new delay of repair requirements as the existing requirements provide flexibility for facilities while minimizing environmental impact.

5.2.3 *Clarifications to Initial Monitoring Requirements for Heat Exchange Systems*

If EPA finalizes the revised requirements for heat exchange systems, we request that EPA clarify, in the preamble to the final rule, the initial monitoring requirements for heat exchange systems. In the preamble to the proposed rule, EPA states the following:

> *"…we identified the following control option for heat exchanger systems as a development in practice that can be implemented at a reasonable cost: Quarterly monitoring for existing and new heat exchange systems (after an initial 6 months of monthly monitoring)"*

With this statement, EPA appears to imply that facilities are required to repeat initial monitoring upon the compliance date of the final rule; however, EPA's statement in the preamble is inconsistent with the proposed rule language. EPA's proposed §63.104(b)(1) requires sources to initially monitor monthly for 6 months beginning upon startup. We do not believe it was EPA's intent to require any source that has already completed 6 months of monthly monitoring under §63.104 to repeat initial monthly monitoring. Nevertheless, we do not support any requirement to repeat initial monitoring for existing facilities or new facilities that have already completed initial monitoring under the current rule requirements. If EPA promulgates the revised standards for heat exchange systems, we support the initial monitoring requirements only for new and reconstructed sources that have yet to complete monthly monitoring and request EPA clarify their intent in the preamble to the final rule.

5.2.4 Clarifications to Revised Heat Exchange System Monitoring Applicability.

Throughout the proposed changes under the HON, EPA uses the phrase "For each source as defined in §63.101…" This language appears to designate that the proposed changes apply only to the affected source under the HON, and not affected sources that must comply with provisions under the HON through a referencing subpart (for example, facilities complying with 40 CFR Part 63, Subpart H for equipment in organic HAP service that are part of the affected source under 40 CFR Part 63, Subpart FFFF). We request that EPA clarify our understanding of the intent of this language. If our understanding is incorrect, and EPA intends that all sources subject to other rules that reference the HON comply with the proposed revisions, then EPA must not finalize the revisions as proposed until it has provided appropriate notice and properly evaluated the costs and impacts to those sources.

EPA's use of this phrase leads to confusion when determining the applicability of the proposed revisions to HON affected sources. The term "source" is defined at §63.101 as:

> *The collection of emission points to which this subpart applies as determined by the criteria in §63.100 of this subpart. For purposes of subparts F, G, and H of this part, the term affected source as used in subpart A of this part has the same meaning as the term source defined here.*

Based on the definition, EPA's use of the phrase "For each source as defined in §63.101…" is reasonable when the Agency proposes to modify the applicability of provisions to the HON affected source as a whole [e.g., EPA's proposed modification of the general standards in §63.102 through newly proposed paragraphs §63.102(e) and (f)]; however, EPA's intent becomes confusing when the Agency applies the phrase to specific types of sources. For example, proposed §63.104(g) reads:

> *(g)* ***For each source as defined in §63.101****, beginning no later than the compliance dates specified in §63.100(k)(10), owners and operators must monitor the cooling water for the presence of total strippable hydrocarbons that indicate a leak according to paragraph (g)(1) of this section, and if an owner or operator detects a leak pursuant to the procedures in this paragraph, then the owner or operator must repair it according to paragraphs (h) and (i) of this section, unless repair is delayed according to paragraph (j) of this section.*

> *The requirements in this paragraph do not apply to heat exchange systems that have a maximum cooling water flow rate of 10 gallons per minute or less.*

(Emphasis added). A plain reading of the above text instructs facilities to monitor cooling water for each source, that is, the collection of emission points to which Subpart F applies. This requirement does not make sense. Although a cooling tower is considered an emission point, to require monitoring of cooling water for a collection of emissions points is ambiguous and generally impractical. One might also interpret the proposed language at §63.104(g) to apply to all heat exchange systems at a facility, instead of excluding those that operate with high pressure on the process side, use an intervening fluid, or are not in HAP service [see §63.104(a)(1) (2), (5) and (6))]. Requiring monitoring of these types of heat exchange systems does not appear to be EPA's intent based on the preamble discussion starting at 88 Fed. Reg. 25,123 and based on the Agency's technology review memorandum where EPA only discusses the removal of exemptions for once through heat exchange systems meeting certain National Pollutant Discharge Elimination System requirements[126] (for which we are unable to locate corresponding changes in the proposed regulatory text). To clarify this ambiguity, the Associations propose the following changes to §63.104(g):

> *(g)* ~~***For each source as defined in §63.101,***~~ ***Unless one or more of the conditions specified in §63.104(a)(1), (2), (5) and (6) are met,*** *beginning no later than the compliance dates specified in §63.100(k)(10), owners and operators must monitor the cooling water* ***of each heat exchange system in each source as defined in §63.101,*** *for the presence of total strippable hydrocarbons that indicate a leak according to paragraph (g)(1) of this section****, except as specified in paragraph (l) of this section****, and if an owner or operator detects a leak pursuant to the procedures in this paragraph, then the owner or operator must repair it according to paragraphs (h) and (i) of this section, unless repair is delayed according to paragraph (j) of this section. The requirements in this paragraph do not apply to heat exchange systems that have a maximum cooling water flow rate of 10 gallons per minute or less.*

To address EPA's proposed requirement to monitor heat exchange systems "in ethylene oxide service," we suggest the following corresponding edits to §63.104(a)(5) and (6):

> *(5) The recirculating heat exchange system is used to cool process fluids that contain less than 5 percent by weight of total hazardous air pollutants listed in table 4 of this subpart.* ***Beginning no later than the compliance dates specified in §63.100(k)(11), this***

[126] EPA-HQ-OAR-2022-0730-0075.

> ***paragraph no longer applies to heat exchange systems in ethylene oxide service as defined in §63.101.***
>
> *(6) The once-through heat exchange system is used to cool process fluids that contain less than 5 percent by weight of total hazardous air pollutants listed in table 9 of subpart G of this part.* ***Beginning no later than the compliance dates specified in §63.100(k)(11), this paragraph no longer applies to heat exchange systems in ethylene oxide service as defined in §63.101.***

5.2.5 *Heat Exchange System Regulatory Overlap Provisions.*

For cooling towers that receive heat exchanger cooling water from refinery process units and HON-regulated CMPUs, the proposed rule doesn't address overlap of the requirements for heat exchange systems and cooling towers with the corresponding 40 CFR 63 subpart CC requirements. EPA's proposed heat exchange system requirements at 40 CFR 63.104(g) effectively mirror the 40 CFR 63 subpart CC requirements at 40 CFR §63.654. We propose adding the following provision:

> *40 CFR 63.110(k) Owners and operators of cooling towers that are associated with heat exchange systems that are subject to the heat exchange system related requirements of this subpart and heat exchange systems subject to the heat exchange related requirements of 40 CFF 63 subpart CC are required to comply only with the provisions specified in 40 CFR 63.654.*

5.3 Process Vents

5.3.1 *Removal of Total Resource Effectiveness Concept*

EPA has not adequately supported its proposal to control all process vents by removing the TRE concept from the HON, and should retain the TRE concept.

EPA is proposing to remove the TRE concept contained in the HON. The HON currently segregates process vents into Groups 1 and 2, where Group 1 vents require control and Group 2 vents generally do not. Group 1 vents have certain characteristics, including a TRE index value less than or equal to 1.0. The TRE index value has been an integral part of many technology-based air standards since its initial development, serving as a mechanism for determining cost effectiveness and triggering the requirements for process vent control (see, e.g., the preamble to the 1994 HON adoption, which states that the TRE concept is appropriate because it "can be used to reflect all possible combinations of various factors that affect emission rates and likelihood of current control" (59 Fed. Reg. 19416, April 22, 1994) and "would provide consistency between the HON[,] the recently issued CTG for SOCMI process vents.... [and] the applicability criteria for the three SOCMI process vents NSPS" (59 Fed. Reg. 19418)).

Group 2 vent gas streams that are not controlled typically have very low HAP emissions, very low VOC emissions, a low net heating value, sometimes contain steam, and have variable volumetric flow rates. Routing these streams to an emission control device, if one exists in the CMPU that can accommodate them, would result in very small emissions reductions and would likely require a significant amount of supplemental fuel to be added in order to combust the stream, which in turn would create CO, NOx, and CO_2 emissions to control a small amount of HAP or VOC emissions.

EPA evaluated removal of the TRE concept from the HON in its technology review. In the preamble to the proposed rule EPA concludes the TRE concept should be removed because there is another chemical industry MACT rule that does not include the TRE concept (Ethylene MACT), some SOCMI facilities are voluntarily controlling process vents with TRE > 1.0, the TRE calculation incorrectly assumes a control device only controls one process vent, the TRE calculation is theoretical, complex, uncertain, and difficult to enforce, and removing the TRE concept in its entirety is cost-effective.[127] However, all of these reasons or findings are flawed and do not adequately support EPA's proposal for reasons described below.

The Ethylene MACT does not Include the TRE Index Value as a Criteria for Control.

EPA's first reason for removing the TRE index value as a criterion for control of HON process vents is that the Ethylene MACT does not include it. A review of the preamble to the original proposal to include ethylene production facilities in the "Generic MACT" standards indicates that "there are relatively few process vents at ethylene manufacturing facilities."[128] This statement indicates that differentiating between Group 1 and Group 2 process vents in that source category is not relevant. It is not that EPA considered and discarded the utility of the TRE index value when it was adding ethylene production facilities to the generic MACT standards; in fact, the generic MACT standards DO include the TRE index value concept for some of the other included source categories that did have multiple types of process vents (see §§63.1103-1104). As EPA notes in their technology review memo, the recently reviewed MON rule does include a TRE index value, but the threshold is set at 1.9 for existing sources.[129] EPA recently completed its technology review of the MON and did not remove the TRE index value as part of the revisions to that rule. EPA's reasoning to remove it from the HON rule because other MACT rules are different is not sound.

[127] 88 Fed. Reg. 25129.
[128] 64 Fed. Reg. 76429.
[129] EPA-HQ-OAR-2022-0730-0094

Some SOCMI facilities are voluntarily controlling process vents with TRE > 1.0.

The second reason EPA provides to remove the TRE concept is that, in the response to the Section 114 request, EPA found that some facilities were voluntarily controlling some of their Group 2 process vents even though their TRE index is greater than 1.0. Other facilities indicated they were voluntarily designating their process vents as Group 1 "so that TRE calculations are not required," nor is attendant monitoring and recordkeeping. While some facilities may be controlling process vents with TRE > 1.0, the reason may not be voluntary or to avoid the TRE calculation. For example, facilities may control these process vents to control VOC to comply with state or local regulations or to meet a BACT limit. Regardless of the reason for controlling process vents with TRE > 1.0, the mere fact that *some* process vents with TRE > 1.0 are controlled at some facilities does not mean that controlling *all* process vents with TRE > 1.0 is appropriate or cost effective. At best, what this means is that control of a *subset* of process vents with TRE > 1.0 *may* be cost effective. EPA may consider raising the TRE index value (e.g., to match the value in MON or to a level that industry agrees is cost effective), but removing the TRE as an alternative to controlling emissions is not supported by the information cited by EPA.

The TRE calculation incorrectly assumes a control device only controls one process vent.

Another reason EPA provides to remove the TRE concept is that the basis of the TRE calculation is inconsistent with real-world configuration of air pollution control systems. The TRE calculation measures the resource effectiveness of using a control device to control one process vent. EPA contrasts this with how facilities reported in the CAA Section 114 request that each control device usually controls multiple process vents, and that having a control device control only one process vent is an unrealistic scenario. Just because a control device can control multiple process vents does not necessarily mean that in all cases control of multiple vents together is cost-effective. If the cumulative emissions from the set of Group 2 process vents are small, then even controlling all of them with one control device would not be cost-effective. In fact, even EPA's very rudimentary cost analysis that assumes it only costs around $5,500 to install some ductwork and a fan to vent a Group 2 process vent to an existing control device[130] finds that it is "not cost effective for the majority of these vents."[131] As with the discussion above, EPA may consider raising the TRE index value, but removing the TRE index value and requiring control of all Group 2 process vents is not supported by EPA's analysis.

[130] EPA-HQ-OAR-2022-0730-0094, Appendix B
[131] 88 Fed. Reg. 25130.

EPA's assessment is the TRE calculation is theoretical, complex, uncertain, and difficult to enforce.

The next reason EPA provides to remove the TRE concept is that it believes the TRE calculation is theoretical, complex and uncertain, and difficult to enforce. EPA finds that the TRE calculation is complex and uncertain because, in a response to the CAA Section 114 request, one respondent included comments about discrepancies between process simulation modeling runs and actual process conditions and data, but this reasoning has significant flaws. One facility's response to a CAA Section 114 request is hardly a basis to infer that every company views the TRE calculation to be complex and uncertain. Additionally, process simulation modeling is only one of several options to determine TRE calculation inputs. Some of our members use source tests results to determine TRE calculation inputs; this approach is neither complex nor uncertain to interpret. The EPA also finds that the TRE calculation is difficult to enforce because it claims that the owners and operators "must determine numerous inputs" to the TRE calculation and verifying those inputs can be problematic. However, this is not always the case. The number of inputs to the TRE calculation is proportional to the number of measurable organic compounds in the vent stream. Some of our members have very few organic compounds in process vents, so the inputs are minimal, and if those inputs are determined by other allowed methods (e.g., source tests, permit limits), then verification of these inputs is clearly not problematic. And even though EPA states that the TRE index value "can be" very difficult to enforce because it is "often theoretical," it has offered no examples of when a TRE calculation was challenging for an agency to verify or was contrary to actual cost-effectiveness at a facility.

EPA finds controlling process vents irrespective of TRE index values to be cost effective

EPA ultimately believes controlling Group 2 process vents irrespective of their TRE index value would be cost effective as long as emissions are greater than or equal to 1.0 lb/hr. EPA's cost-effectiveness analysis for the HON is summarized in Table 14 of the preamble. EPA evaluates the cost-effectiveness of three control options. Control Option #1 (EPA's proposal) removes TRE and requires control of all process vents with emissions greater than or equal to 1.0 lb/hr. Control Option #2 is the same as Option #1 except the Group 1 vent HAP threshold is lower. Control Option #3 is status quo except the TRE threshold is raised from 1.0 to 5.0. While EPA recognizes that Control Option #3 (to retain the TRE, but at a higher value) is just as cost-effective as Control Option #1 (redefines Group 1 process vent and removes TRE), EPA elects to propose Control Option #1 because Control Option #3 would require keeping the TRE concept which is "not desired" because of the three reasons listed above. However as discussed above, those reasons are an inadequate basis to abandon the TRE concept. Furthermore, many of our members will still be required to comply with TRE-based determinations according to their Title V operating permits and requirements under NSPS Subparts NNN and RRR. Instead of arbitrarily setting a 1 lb/hr threshold, EPA should retain the TRE concept and set the TRE index value at a value that represents cost-effective control for HON vents.

5.3.2 New Group 1 Process Vent Criteria

EPA is proposing to change the definition of a Group 1 process vent to a process vent that emits greater than 1.0 lb/hr of total organic HAP. This has been changed from the existing definition which specifies a vent stream flow rate greater than 0.005 standard cubic meters per minute (scmm), total organic HAP concentration greater than 50 ppmv, and a total resource effectiveness (TRE) value less than or equal to 1.0.

EPA prepared a cost analysis evaluating this change, where its Air Pollution Control Cost Manual was utilized to estimate the cost of installing a recuperative thermal oxidizer to control emissions from all process vents that were historically categorized as Group 2 vents that have emissions greater than 1.0 lb/hr and would require control due to the proposed change. The total capital investment estimated using the cost manual for installation of a thermal oxidizer was proposed at $65,577 and total annual costs of $195,916. These estimates were based on a single process vent with a volumetric flow rate of 10 standard cubic feet per minute (scfm) and the assumption that one control device would be installed to comply with the new requirements. EPA has estimated that there are only 23 Group 2 process vents greater than 1.0 lb/hr per HON facility and that only 1/3 of those vents are not already controlled. Additionally, EPA assumed there are only 16 facilities that will have existing Group 2 process vents with emissions greater than 1.0 lb/hr that will now require control. This evaluation is based on the CAA Section 114 request data, where only two of the 13 facilities had Group 2 vents with emissions greater than 1.0 lb/hr and of those two facilities, there was only a single vent that was not already controlled and thus would require a control device be installed.

It is reasonable to assume that a single new control device will be installed for facilities that will be controlling existing Group 2 process vents with emissions greater than 1.0 lb/hr. However, the use of 10 scfm for determining a total capital investment for the new control device is not representative. Although these vents are expected to have lower volumetric flow rates than many existing Group 1 vents, there are logistical and safety concerns that must be considered when designing a closed vent system and thermal oxidizer that necessitates higher flow rates. Additionally, for facilities that have these vents, there are multiple facilities with more than one vent per facility. Thus, multiple vents will need to be collected into a common system which will correspond to a higher flow rate. In addition to the capital investment for the equipment, there are other costs involved with a project to design and install a new closed vent system and control device that have not been captured in the analysis EPA has prepared. The engineering costs can make a project much more expensive than simply the cost of the equipment alone. A reasonable low-end estimate for a new thermal oxidizer for controlling these process vents is closer to a $1,000,000 total capital investment. One of our members indicates control of existing Group 2 process vents will cost in the range of $5 to $15 million per facility, which includes equipment, engineering, and installation costs. In addition, this member produces chlorinated compounds, so any new thermal oxidizer will need to be equipped with acid gas and dioxin/furan controls, which add to the project cost and were not included in EPA's cost analysis. Therefore, we request that the cost effectiveness evaluation be revised to account for the entire cost of installing a thermal oxidizer and any necessary additional controls for halogenated streams.

To determine the final VOC and HAP costs for evaluating whether the proposed changes were cost effective, EPA calculated the sum of the total annual costs associated with implementing controls for Group 2 process vents with emissions greater than 1.0 lb/hr and divided by the total VOC and HAP emissions reductions in tpy to estimate a cost effectiveness in dollars per ton ($/ton). The total annual costs were separated by facilities that were included in the CAA Section 114 request and the remaining HON facilities. Additionally, costs and emissions reductions were included for Group 2 process vents that are already controlled. The final calculation for estimating the cost effectiveness included a total annual cost of $3,150,000 and a HAP and VOC reduction of 436 tpy. The process vents that are already voluntarily controlled account for 366 tpy of the total reduction even though they will not have emissions reductions as a result of implementing the new proposed definition of a Group 1 process vent. If EPA determines that the emissions reductions from these vents should be included in the analysis, the agency must account for the entire cost associated with controlling these emissions (i.e. - annual costs associated with operating a thermal oxidizer), rather than only the costs associated with the installation and operation of ductwork and blowers. If there are no emissions reductions expected from process vents that are already voluntarily controlled, we request that the cost effectiveness analysis be revised such that it does not include reductions from these vents.

In response to EPA's cost estimates summarized in Table 14 of the preamble, one of our members prepared a detailed cost estimate to control multiple Group 2 process vents that would require control as a result of eliminating TRE as a criterion. The project included procurement and installation of a new control device, blowers, piping for both vents and natural gas lines, instrumentation, foundations, engineering and labor. The resulting cost per ton to control the Group 2 vents was approximately $925,000/ton of HAP reduction. As such, EPA's estimate for Option 1 cost is significantly understated and Option 1 is not cost effective.

The Associations additionally note that proposed § 63.115(g) requires facilities to perform direct measurements to determine that a vent stream is Group 2; that is, to demonstrate that a vent stream total organic HAP mass flow rate is less than 1.0 pound per hour. The Associations request that

EPA revise § 63.115(g) to allow facilities to meet this requirement by the use of existing test data if the underlying emissions unit is subsequently unchanged.

5.3.3 Reference Errors Related to Process Vents

We request EPA correct the following reference errors:

- §63.108(a)(1) references §63.107(h)(9)(i). We assume EPA's intent was to reference 63.107(i) because there is no existing or proposed paragraph §63.107(h)(9)(i).
- §63.100(k)(10)(i) references §63.107(h)(9)(ii). We assume EPA's intent was to reference §63.107(j) because there is no existing or proposed paragraph §63.107(h)(9)(ii).

5.4 Storage Vessels

5.4.1 The Proposed Requirement at §63.119(b)(7) is Not Cost-Effective and Should Not be Included in the Final Rule.

At §63.119(b)(7), EPA proposes to require facilities that use a sweep, purge, or inert blanket between an internal floating roof and the fixed roof route emissions through a closed vent system to a control device. The Associations, however, are unable to locate any justification or basis for this requirement, other than a reiteration in the preamble.[132] We are also unsure of the applicability of the requirements EPA is proposing. It is our understanding that most internal floating roof tanks are equipped with a sweep, purge, or blanket. These tanks are normally not designed to hold pressure, and the space between the internal floating roof and the fixed roof must vent somewhere when the vessel is being filled—and conversely there must be a mechanism to avoid a vacuum in the tank when the vessel is being emptied to prevent a tank failure. Without a supporting analysis or any other additional information, it's unclear whether these proposed provisions would apply to all tanks with a sweep, purge, or blanket, or only a subset. If EPA retains the proposed requirements, we request the Agency clarify their applicability.

Additionally, EPA is requiring that emissions be routed through a closed vent system and control device that meets the requirements of §63.119(e). This results in a level of control beyond the floor established for Group 1 storage vessels under CAA Section 112(d)(2)/(d)(3) without an appropriate consideration of cost under CAA Section 112(h). The resulting level of control is, in effect, greater than that of a Group 1 storage vessel for which the facility chooses to comply only with the option in §63.119(e) (i.e., emissions are first reduced through the use of a floating roof, and further reduced through the use of a closed vent system and control device as opposed to using a control device to reduce emissions from a fixed roof tank). Facilities could remove the internal

[132] 88 Fed. Reg. 25,175.

floating roof, route all emissions to a control device (thereby increasing emissions) and remain in compliance with the rule. The proposed requirement essentially renders internal floating roof tanks obsolete. EPA's proposed requirement does not stand to reason without additional explanation and justification.

Had EPA appropriately analyzed the proposed standard under their technology review framework, which includes consideration of the cost-effectiveness of controls [refer to CAA 112(d)(2) which states EPA must take cost into consideration in establishing emission standards under Section 112 of the CAA] it would have concluded that the proposed requirement is not cost effective.

For a preliminary analysis, the Associations used the following approach to estimate the cost-effectiveness of this proposed requirement. We estimated emissions for an internal floating roof storage tank complying with EPA's proposed SV 2 control option (i.e., upgraded deck fittings and controls for guide poles) using the emissions and emissions reductions from Table 9 and Table 15 of the memorandum titled "Survey of Control Technology for Storage Vessels and Analysis of Impacts for Storage Vessel Control Options."[133] The emissions reductions from Table 15 were subtracted from the controlled emissions in Table 9 for each model tank and material (where available). The difference in emissions was assumed to be reflective of the annual emissions from EPA's proposed SV 2 control option. We then multiplied the emissions rate by 95% to represent the control level that would be required for purged emissions under §63.119(e). For each modeled tank, the emissions reductions averaged 0.1 lb/hr, the same mass rate that EPA found was not cost-effective to control for process vents.[134] Using EPA's thermal oxidizer cost template (which, as stated elsewhere in these comments, we note severely underpredicts the actual costs of installing and operating a thermal oxidizer), we calculated the cost to control 0.10 lb/hr of benzene with a flow rate of 0.75 SCFM (a conservatively low value for sizing a thermal oxidizer). The total annual cost to operate the thermal oxidizer was calculated as approximately $190,000/yr. This equates to a cost per ton of over $400,000 – a value that is clearly not cost effective. Acknowledging that a continuous purge of an inert blanket will result in higher emissions from an IFR than no purge, emissions would have to be over 40 times greater for the requirement to become cost-effective.

Beyond our preliminary approach described in the preceding paragraph, additional consideration should be given to the realities of installing controls to abate emissions from a sweep, purge, or inert blanket on a floating roof tank. At large facilities, such as refineries, a tank farm may provide secondary containment for multiple internal floating roof tanks. The height of such secondary containment structure, including appropriate freeboard, can be relatively low as the large area of the tank farm provides ample area when multiplied by the height to provide a volume equal to the

[133] EPA-HQ-OAR-2022-0730-0073, Attachment 4.
[134] 88 Fed. Reg. 25130.

containment volume necessary for at least one tank. The same is not true at smaller chemical manufacturing sites. For these sites one or a few large internal floating roof tanks may suffice to support the manufacturing operations and each tank may have its own secondary containment system to conserve real estate. Walls for such secondary containment may be made of non-earthen materials such that the internal floating roof tank is essentially set within an open top tank. To provide the necessary secondary containment volume in a limited area the distance between the walls of the tank and secondary containment may be minimized and the height of the latter maximized to provide just enough space for maintenance operations. For stand-alone internal floating roof tanks the wall height of the secondary containment can equal well over half the height of the internal floating roof tank's wall. For such tanks with volumes of one to two million gallons the secondary containment wall may approach fifty feet in height. Design of the system must take into account wind loadings and other safety considerations such that the tank and secondary containment are not connected with fixed structural elements.

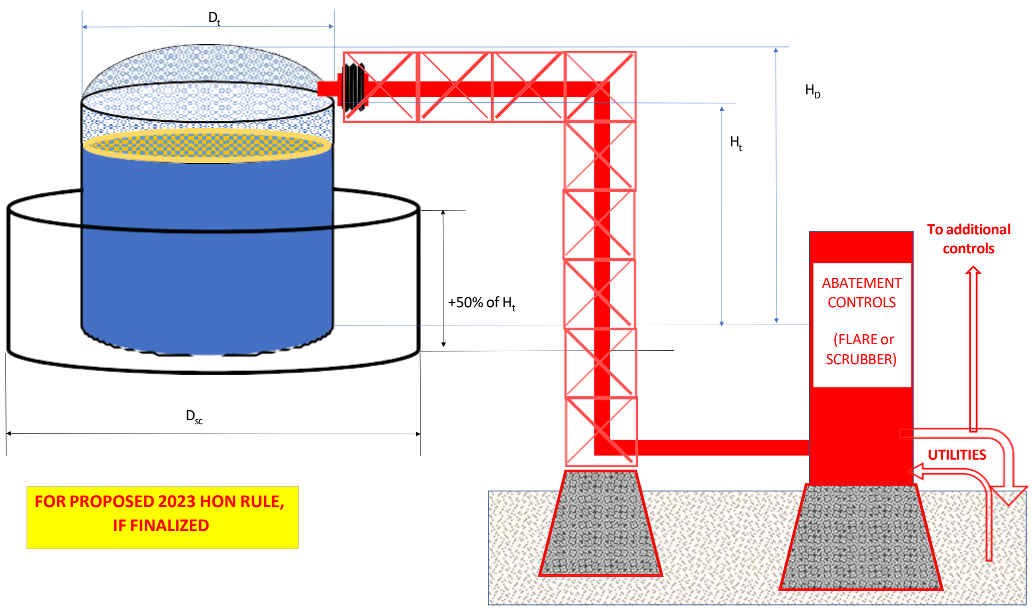
The design considerations noted above could make adding post controls to internal floating roof tanks more difficult and expensive for stand-alone tanks than for those located at larger tank farms. The structures necessary to support additional ductwork may interfere with the available maintenance space inside the secondary containment and, thus, may have to be located outside of the secondary containment area. Placing new supporting structures with foundations within secondary containment areas, and whether for stand-alone tanks (if possible) or tank farms, will very likely require additional ground water protection measures. For steel bottoms at stand-alone internal floating tanks the additional structures will be a potential point of secondary containment failure which may not be easily identifiable and for which the inspections may often require otherwise avoidable confined space entry procedures for the safety of employees. Designing for these concerns and implementing them will be very expensive. Furthermore, the additional infrastructure needed to provide additional power, fuel, drainage systems, and other abatement media will at least in part provide risks of other releases to the environment.

If a new scrubber were used to control emissions, the facility may be required to install an additional water supply and wastewater drainage system, including tanks for each, plus a closed vent system to collect air emissions between the scrubber and wastewater treatment systems per §63.136. These would be necessary to connect sources and abatement devices at remote locations where many large internal floating roof tanks are located. The more distant a location is located the more opportunity there will be for leaks in wastewater and closed vents. In areas subject to freezing weather, more energy will be necessary for freeze protection, whether provided by steam or electricity, if the lines cannot be buried underground. Failures in those ancillary systems could result in potentially more releases to the environment.

If a flare were installed to control emissions, it would require continuous flame, not just a pilot flame, to control a nitrogen -rich gas stream that is intended not to burn for safety reasons. Adding a flare would require additional layers of protection to minimize the potential for a catastrophic event. The additional flare will require its placement at a remote location outside an area with an electrical classification code of Class 1, Division 2 in addition to other safety measures. Thus, the magnitude of the infrastructure to supply fuel, monitoring controls and communications, power, and a closed vent system can be potentially that much greater.

These downstream abatement measures to the internal floating roof tanks will require significant structural foundations to and from, or between, as applicable, emission sources, air abatement controls, utilities, and control systems for tanks already located at relatively remote locations, making them more costly than otherwise similar ancillary equipment at locations closer to manufacturing operations.

Representations of the types of improvements that may be necessary due to the proposed rule for a stand-alone internal floating roof tank are depicted in the figure below.



Improvements Required for Internal Floating Roof Tanks

As a specific example, one of our associations' members has estimated they will be required to control less than 0.6 tons per year of HAP with a flare or scrubber for two internal floating roof tanks that are equipped with a nitrogen sweep or purge. The capital and annualized cost of the additional abatement controls provided by the member are presented in the following tables. Based on input from the member, the wide range of costs is due to insufficient time for a detailed engineering review. Even so, the low end of the potential budgetary values still indicates the proposed required additional abatement is cost prohibitive.

Flare	-50% $	Est. $	+50% $
Capital Cost	**$3,000,000**	**$6,000,000**	**$9,000,000**
years	15	15	15
% rate	0.055	0.055	0.055
Annualized Cost	**$298,877**	**$597,754**	**$896,630**
CRF	9.963%	9.963%	9.963%
	0.0996	0.0996	0.0996
TPY Reduction	**0.579**	**0.579**	**0.579**
$/ton	**$515,776**	**$1,031,552**	**$1,547,328**

Scrubber	-50% $	Est. $	+50% $
Capital Cost	**$1,500,000**	**$3,000,000**	**$4,500,000**
years	30	30	30
% rate	0.0550	0.0550	0.055
Annualized Cost	**$103,208**	**$206,416**	**$309,624**
CRF	6.881%	6.881%	6.881%
	0.0688	0.0688	0.0688
TPYReduction	**0.562**	**0.562**	**0.562**
$/ton	**$183,732**	**$367,464**	**$551,196**

Based on both our preliminary analysis and the specific example provided by a member, EPA has not properly analyzed the cost-benefit of the proposed requirement at §63.119(b)(7). Had it done so, it would have found that the requirement is not cost-effective and should not be included in the final rule. If EPA revises its analysis and finds that controlling these small amounts of emissions is cost-effective, we request EPA also consider the secondary emissions (i.e., CO, NO_x, and CO_2) that will result from the additional fuel required to treat a stream largely comprised of inert gas.

5.4.2 *EPA Should Adjust the Proposed Requirements for Pressure Vessels at §63.119(a)(7)*

EPA has essentially proposed an LDAR program for pressure vessels at §63.119(a)(7), but the proposed language should be adjusted to better reflect a more traditional LDAR program, the goal of which is to find and fix leaks on a certain schedule. EPA should not finalize the language at §63.119(a)(7)(iii) that states any instrument reading greater than 500 ppmv is a deviation. A deviation should occur only if corrective action is not initiated (the leak repaired) within a set amount of time. Revising the language to reflect a more traditional LDAR approach will still accomplish EPA's goal of limiting emissions from pressure vessels[135] by finding and fixing any leaks from these tanks. At a minimum, EPA should clarify what is meant by monitoring "each

---

[135] EPA-HQ-OAR-2022-0730-0009.

point on the pressure vessel at §63.119(a)(7)(ii)." . EPA should clarify that components such as valves, pumps, and flanges servicing a pressure vessel and that are already subject to LDAR program requirements are excluded from these provisions.

EPA should also incorporate "unsafe-to-monitor" and "inaccessible" provisions at §63.119(a)(7) similar to those in other sections of Subpart H and in 40 CFR Part 63, Subpart UU – National Emission Standards for Equipment Leaks – Control Level 2 Standards for pressure vessels because some pressure vessels are located in concrete containment areas, are partially buried, or otherwise inaccessible for safety purposes. Without such provisions, facilities may be required to relocate or install new pressure vessels in order to comply with the requirements in the final rule. These costs were not included in EPA's cost analysis for these new requirements.[136]

5.4.3 Additional Time Should be Provided for Compliance if EPA Finalizes the Proposed Requirements at §63.119(b)(5)(ix) through (xii), §63.119(b)(7), and Table 5 to Subpart G of Part 63.

If EPA finalizes the proposed requirements at §63.119(b)(5)(ix) through (xii), §63.119(b)(7), and Table 5 to Subpart G, the Associations request that the Agency allow facilities to comply with these requirements either the next time the storage vessel is emptied and degassed, or no later than 10 years for the date the final rule is published in the Federal Register. EPA has not considered the costs to degas and clean storage vessels as part of their technology review and these costs represent a significant expenditure to facilities. To minimize unnecessary additional investment, extra emissions from degassing the tanks, and increased solid waste and wastewater generation due to the extra degassing and cleanout required to install controls prior to the next scheduled maintenance event, EPA should allow facilities to wait until the next time the storage vessel is planned to be emptied and degassed so that cleanout costs and control installation is aligned with facilities' tank inspection schedule, similar to the allowance originally made for internal floating roof tanks at §63.119(b)(3)(iv).

In addition, if EPA finalizes the proposed requirements at §63.119(b)(5)(ix) through (xii), EPA should improve clarity of which requirements no longer apply after the compliance dates (it is not clear whether §63.119(b)(5)(i) should either be referenced in §63.119(b)(5)(ix) or include language "Except as specified in paragraph (b)(5)(ix) of this section," as EPA has proposed to include at §63.119(b)(5)(ii).

[136] EPA-HQ-OAR-2022-0730-0009.

5.4.4 Facilities Should Only be Required to Clean Railcars, Tank Trucks, or Barges that they Own.

Section 63.119(g)(6) requires that railcars, tank trucks, or barges that deliver HAP to a storage vessel be reloaded or cleaned at a facility that utilizes the control techniques specified in paragraph (i) or (ii). We request EPA clarify that facilities are only required to follow the rule requirements for cleaning railcars, tank trucks or barges that they own; facilities have no control over how their suppliers' equipment is cleaned.

5.4.5 Tables 21-23 to Subpart G of Part 63 Should be Updated.

EPA has not proposed to update Tables 21-23 to 40 CFR Part 63, Subpart G. However, these tables reflect certain values that are used in storage tank emissions calculations in AP-42 Section 7.1, which was recently updated by EPA. Tables 21-23 should be updated to reflect or refer to the most recent version of AP-42 Section 7.1.

6. OTHER COMMENTS CATEGORIZED BY EMISSION SOURCE

6.1 Flares

6.1.1 EPA Should Revise the Flare Monitoring Provisions for Temporary and Portable Flares

The Associations request that each instance of a temporary or portable flare operated in lieu of a permanent flare or other control device during the maintenance of that control device for less than 30 days every three years should not be required to demonstrate compliance with the new flare requirements in §63.108. We raised this issue in our petition for reconsideration of the 2020 MON rule revisions. While we agree with the Agency that consistent with Sierra Club v. EPA, 551 F.3d 1019, 1028 (D.C. Cir. 2008) there must be continuous section 112-compliant standards, EPA has recognized that different standards may be appropriate under different operating conditions. We are concerned that the Agency has failed to consider or provide such an alternative.

At a minimum, EPA should adjust the instrument monitoring requirements for temporary and portable flares as many are used for three to 21 days for most applications. In some cases, temporary flares may only take flows from a portion of the applicable HON CMPU or plant, such as liquid storage tank vents, when the main process and flare is shutdown.

To comply with §63.108 of the final rule, which references §63.670 and §63.671 of the Refinery MACT flare requirements, the suppliers of temporary and portable flares will have to equip these flares with the following instruments if the equipment associated with an existing fixed flare cannot be used:

- Vent gas flow meter with temperature and pressure monitors;
- Steam-assist flow meter (for steam-assisted flares) with temperature and pressure monitors;
- An on-line calorimeter or an on-line gas chromatograph to measure vent gas net heating value; and,
- Video camera with video recording.

All of the flow meters and analyzers will have to meet the requirements in Table 13 to comply with Subpart CC of Part 63 with respect to accuracy and calibration requirements. The flare supplier/regulated entity will have to document compliance with all of these requirements.

In addition, based on member company experiences with these types of instrument additions, the flare supplier will likely have to add at least one more person to their project team to ensure that all instruments are operating properly and recording data properly. The transfer of the flare data from the portable flare vendor to the client presents potential cybersecurity and potential data integrity issues as well. Taken together, these requirements will significantly increase the cost, perhaps doubling it or more, and increase the complexity of using a temporary or portable flare, which again may be used for as little as a few days to a few weeks at a time.

Therefore, we suggest that regulated entities be allowed to use a combination of process knowledge, engineering calculations, and/or instruments to determine the following variables when temporary or portable flares are used to demonstrate compliance with the NHVcz, NHVdil, or NHVvg requirements in the final rule:

- Vent gas flow;
- Supplemental gas flow (if added separately);
- Steam-assist flow or air-assist flow; and
- Vent gas net heating value.

6.1.2 The Force Majeure Provision for Flares and PRDs should not be Eliminated.

EPA is proposing work practices to address periods of emergency flaring (i.e., when the vent gas flow rate is above the smokeless capacity) and PRD releases consistent with similar standards promulgated for the Ethylene Production MACT (EMACT)[137] and the Miscellaneous Organic

[137] 85 Fed. Reg. 40386.

Chemical Manufacturing NESHAP (MON).[138] In each rule, these work practice standards include criteria that identify emergency flaring events and PRD releases as deviations; however, EPA has proposed not to exclude releases caused by *force majeure* events from being considered deviations [e.g., the proposed rule text at §63.108(o)(2) and (4)], consistent with the Agency's position in the National Emission Standards for Hazardous Air Pollutants: Ethylene Production, Miscellaneous Organic Chemical Manufacturing, Organic Liquids Distribution (Non-Gasoline), and Petroleum Refineries Reconsideration proposed rule[139], presumably for the same reasoning stated therein. The Associations oppose EPA's proposed decision not to incorporate *force majeure* provisions in the emergency flaring and PRD work practices for the HON and P&R I.

The following comments were submitted by ACC, in conjunction with the American Petroleum Institute (API) and the American Fuel & Petrochemical Manufacturers (AFPM) in response to EPA's proposed reconsideration rule and are applicable to this proposal in light of EPA's reliance on the previous establishment of the work practice standards, and the Agency's assertion that the provisions within EMACT and the Refinery Sector Rule are equally applicable to HON and P&R I facilities, e.g.:

> *In several of the EPA's previous impact analyses (for petroleum refinery flares and ethylene production flares),[126] the EPA established the number of events in a given time period that would be the "backstop" (i.e., a violation of the standard). In each of these analyses, the EPA evaluated four different timing alternatives (2 in 5 years; 2 in 3 years; 3 in 5 years; and 3 in 3 years) based on the number of existing flares evaluated over a 20-year period, and ultimately the EPA concluded that 3 events in 3 years would be ''achievable'' for the average of the best performing flares. We see no reason why this would be any different for HON and P&R I flares.[140] ([126]See EPA-HQ-)AR-2010-0682-0793, EPA-HQ-OAR-2010-0682-0794, and EPA-HQ-OAR-2017-0357-0017.)*

First, EPA fails to cite the legal authority on which it relies in proposing to eliminate/not to incorporate the *force majeure* provisions and fails to demonstrate how the proposed rule satisfies the applicable statutory standard setting requirements.

These provisions were first promulgated as part of the suite of regulations addressing PRDs and emergency flaring in the 2015 Refinery Sector Rule. They were promulgated under CAA Section 112(d)(2)/(3). 80 Fed. Reg. 75178, 75217 (Dec. 1, 2015)(PRDs), 79 Fed. Reg. 36880, 36904 (June 30, 2014)(Flares). Because EPA's current proposal not to include the *force majeure* provisions

---

[138] 85 Fed. Reg. 49084.
[139] 88 Fed. Reg. 25574.
[140] 88 Fed. Reg. 25150.

constitutes a decision by EPA to reconsider the standards originally included in the Refinery Sector Rule, it might be inferred that this aspect of the proposed rule is grounded in CAA Section 112(d)(2)/(3) because that is the authority for the original standards. EPA does not conduct a new "MACT floor" and "above the floor analysis" or otherwise explain how the proposal comports with the analyses presented in the original rulemaking.

Similarly, it is plausible that in the proposed reconsideration rule and in this proposal, EPA relies on its authority to periodically review existing NESHAPs under CAA Section 112(d)(6). But, if so, EPA fails to explain why the proposal not to include the *force majeure* provisions is "necessary" based on an analysis of "developments in practices, processes, and control technologies." CAA Section 112(d)(6).

In sum, the proposal not to include the *force majeure* provisions is fundamentally flawed because EPA has not identified the standard setting authority on which it relies and has failed to demonstrate how this aspect of the proposal satisfies either of the two authorities on which the rule might be based.

Second, in the proposed reconsideration rule, EPA's analysis of events classified as *force majeure* is incomplete because the Agency only reviewed data from 2019 through 2021 and only looked at petroleum refineries in two states.[141] Due to the rarity of these events, such a limited review provides data that are not representative of all affected source categories across the longer periods of time that are relevant in assessing the existence and frequency of *force majeure* events. For example, the frequency of hurricanes along the Texas coast where many facilities operate is one about every six years.[142] Given that every hurricane does not produce a *force majeure* event, these data alone suggest that EPA's investigation should encompass at least a decade.

Third, the fact that the *force majeure* provisions are not frequently used is not a rational or adequate basis for eliminating/not including these provisions. By definition, *force majeure* events should be rare occurrences. They are effectively defined as "acts of God" (e.g., natural disasters, acts of war or terrorism, loss of external utilities). See, 40 CFR. § 63.641 (definition of *force majeure* event). These are events that should not be expected to occur with any frequency or regularity, either for a given affected facility or even for the affected source categories as a whole.

Moreover, the circumstances under which an owner or operator would invoke the *force majeure* provisions are even more rare because not all *force majeure* events will lead to atmospheric venting

---

[141] 88 Fed. Reg. 25580.
[142] Roth, D. *Texas Hurricane History.* National Weather Service. Camp Springs MD. Pg. 4. Available: https://www.weather.gov/media/lch/events/txhurricanehistory.pdf.

from PRDs or emergency flaring events. For example, facility owner/operators often will have advance notice of natural disasters (such as hurricanes) and will take steps to avoid venting or flaring, such as curtailing the operation of affected facilities or shutting them down altogether. Thus, the fact that EPA's data indicate that the *force majeure* provisions are rarely invoked is unsurprising and is a natural consequence of the very narrow situations where these provisions might need to apply.[143]

Fourth, *force majeure* events do indeed occur, and, when they happen, affected facilities should not be thrust into an impossible compliance situation. Both the PRD and emergency flaring rules impose a limit on the number of events that are accommodated under the rules over a specified period of time. If an affected facility has met, but not exceeded, the applicable number of permissible occurrences and subsequently experiences a *force majeure* event, that facility would incur a violation of the PRD and/or emergency flaring provisions if *force majeure* events are not excluded. Thus, because "*force majeure* event" is defined to cover only events that are beyond the control of the owner/operator, an affected facility could incur liability for a violation even though it had no way to avoid the violation. Given that it would be impossible for the affected facility to comply with the rules absent the *force majeure* provision, it would be unreasonable and arbitrary for EPA to not include the provision.

Fifth, and lastly, ease of enforcement is not a rational basis for eliminating/not including the *force majeure* provisions. The existing compliance provisions are adequate for reasonably tracking situations where *force majeure* is invoked. To the degree EPA believes that they are not, the proper solution is to amend the compliance assurance requirements. In any event, EPA's rationale (*force majeure* may be invoked in situations where it is not applicable) is broadly true of any regulatory requirement – i.e., willful noncompliance always is a possibility, regardless of the applicable requirement. That possibility does not justify exclusion of an otherwise needed and appropriate compliance alternative. Notably, the fact that *force majeure* is invoked infrequently is evidence that the *force majeure* provisions are not being abused, as EPA hypothesizes.

In conclusion, *force majeure* provisions are legally viable and factually justified. Inclusion of provisions for *force majeure* events is warranted because even the best controlled sources cannot always comply with the standards that otherwise would apply when acts of God occur. For these reasons, EPA should include the *force majeure* provisions for emergency flaring and PRD work practices under the HON and P&R I rules.

---

[143] We note that Administrator Regan recently signed a proposed rule that would fundamentally reshape the electric power sector. See NSPS for GHG Emissions from New, Modified, and Reconstructed Electric Utility Generating Units | US EPA. This unprecedented and aggressive rule will potentially impact the reliability/resiliency of the electric grid and alone could be a reason for greater reliance on the *force majeure* provision, given that loss of utility external to the facility is included in the definition of *force majeure* event.

6.1.3 Overlap with 40 CFR Part 63, Subpart CC.

For flares that receive gases from refinery process units and HON-regulated CMPUs, the proposed rule doesn't clearly address overlap of the 40 CFR 63.108 requirements for flares with the 40 CFR 63 subpart CC requirements. The regulatory overlap provisions should be modified to account for this for petroleum refinery flares that are shared between refinery process units and HON CMPUs located within the petroleum refinery. We propose the following language be added:

> *40 CFR 63.110(j)(2) Owners and operators of flares that are subject to the flare related requirements of this subpart and flare related requirements of 40 CFR 63 subpart CC are required to comply only with the provisions specified in 40 CFR 63.670 and 671.*
>
> *40 CFR 63.110(j)(~~2~~3) Owners and operators of flares that are subject to the flare related requirements of this subpart and flare requirements of any other part 60, 61, or 63 rule (other than 40 CFR 63 subpart CC) may elect to comply with the requirements in §63.108 of subpart F of this part in lieu of all flare related requirements in any other part 60, 61, or 63 rule (other than 40 CFR 63 subpart CC).*

6.2 Maintenance Vent Provisions

We support EPA's conclusion that emissions from maintenance activities should be subcategorized based on class because, as EPA points out, "there must be a point in time when the equipment can be opened and any emissions are vented to the atmosphere."[144] The Associations have reviewed EPA's analysis of permit conditions that regulate opening equipment for maintenance and generally agree that the proposed requirements and options in §63.113(k)(1) through (3) and §63.486(i)(1) through (3) represent the emissions reductions achievable by the best performing sources. However, we have identified several clarifications and revisions necessary for successful implementation of the proposed standards. We request EPA include the following items in the final rule:

6.2.1 EPA Should Clarify Facilities Are Allowed to Depressurize Equipment Back to a Process or to a Fuel Gas System Prior to Venting a Maintenance Vent to the Atmosphere

As proposed, §§63.113(k)(1) and 63.486(i)(1) would only allow depressurization of a maintenance vent to a flare meeting the requirements of §63.108/§63.508 or a non-flare control device meeting the requirements specified in §§63.113(a)(2) or 63.508(a)(2). EPA should add language to the rules to allow facilities to depressurize equipment back to a process or to a fuel gas system, rather than

[144] EPA-HQ-OAR-2022-0730-0010.

only to a flare or other control device. Alternatively, EPA should clarify in the preamble to the final rule that purging or depressurizing equipment back to a process or fuel gas system is allowed and that EPA is only regulating the act of venting a maintenance vent to the atmosphere.

Depressurizing back to the process avoids unnecessary emissions from a flare or other control device, avoids secondary emissions from any supplemental fuel required by the control device, and results in a cost savings for facilities because material from the equipment is recovered. Depressurizing to a fuel gas system reduces emissions because the material offsets supplemental fuel that would otherwise be required. In light of these benefits, allowing depressurization back to processes or to a fuel gas system is appropriate and should be allowed. Notably, similar allowances are provided for maintenance vents at refinery operations subject to 40 CFR Part 63, Subpart CC at §63.643(c)(1).

Although we acknowledge that the maintenance vent standards, as proposed, allow for no additional control if one of the required conditions is met without venting to a flare or non-flare control device, facilities would like the flexibility to be able to vent back to the process or to a fuel gas system to avoid having to make and document the determination that the vapor has met the conditions in the rule. Having this flexibility would result in a reduction in emissions as maintenance vents would be vented back into a controlled system rather than to the atmosphere after certain vapor characteristics are achieved. Although EPA disagreed with our comment requesting this flexibility in the 2020 MON rule revisions, we continue to believe that this request is reasonable and supportable. We understand that EPA has specifically reviewed compliance alternatives for maintenance vents and believe that our suggested alternative option is one that was not considered and should be included in the final rule as a work practice that will serve to limit emissions from maintenance vents.

6.2.2 EPA Should Correct the Misuse of the term "Lower Explosive Limit" for Maintenance Vents and Storage Vessel Degassing

Under the proposed maintenance vent provisions in the HON and P&R I, facilities would be required to remove process liquids from equipment as much as is practical and depressurize the equipment until at least one of several different proposed requirements are met. The first optional requirement in §§63.113(k)(1)(i) and 63.486(i)(1)(i) reads:

> *The vapor in the equipment serviced by the maintenance vent has a lower explosive limit (LEL) of less than 10 percent and has an outlet concentration less than or equal to 20 ppmv hydrogen halide and halogen HAP.*

The LEL defines the lowest concentration where flammable gases or vapors are explosive when mixed with air and varies from gas to gas. The LEL is a fixed physical property of compounds and mixtures. The LEL of a vapor cannot be changed by purging or otherwise removing portions of the vapor from equipment. The concentration of a flammable gas or mixture can be lowered (e.g., by dilution or displacement) to a level that is less than the LEL. Thus, we request that EPA clarify that **the concentration** of the vapors in equipment and storage vessels be less than 10% of the LEL and that facilities are to measure the concentration of the vapors as a percent of the LEL (i.e., with a hand-held analyzer that reports concentration as a percent of LEL, and not the LEL itself). These changes should be made to the proposed revisions in §63.113(k), §63.118(f) and (m), §63.119(a)(6)[145] §63.486(i), §63.491(h), and §63.492(g).

6.3 Process Vents

6.3.1 Limits for Chlorinated Dibenzo Dioxins/Chlorinated Dibenzo Furans

The Associations are concerned about EPA's proposed dioxins and furans standard of 0.054 nanograms per dry standard cubic meter (ng/dscm) corrected to 3% oxygen on a toxic equivalency basis (ng/dscm, 3% O_2 TEQ) which the Agency has proposed will apply to chlorinated process vents under the HON, chlorinated continuous front-end process vents under P&R I, and process vents associated basic liquid epoxy resins and wet strength resins under P&R II.

EPA's proposed limit is based on three times the representative detection limit (3XRDL), which is "the lowest MACT emission standard the EPA would set due to measurement limitations;"[146] In their limit determination, EPA used a dataset in which the majority of the tests, including those used to represent the best performing units, were performed on polyvinyl chloride (PVC) and vinyl chloride monomer/ethylene dichloride (VCM/EDC) units over a decade ago. Further, EPA's dataset only represents a subset of HON units, i.e., VCM/EDC, and does not include data for P&R I or II units.

Instead of collecting additional data as part of their ICR request, the Agency justifies the application of the HON standard to P&R I and II by stating that the formation mechanism of dioxins (combustion) is the same. EPA fails to consider the potentially significant differences within HON sources and between HON and P&R I and II sources that can impact the formation of dioxins and furans such as chlorine loading and waste heat recovery (i.e., absence of a quench section). EPA's proposed reasoning could be applied to mean that it is unnecessary to set a different standard for dioxins and furans for industrial boilers, hazardous waste incinerators, and

[145] In proposed §63.119(a)(6), the second instance of "LEL" should be corrected to read "The owner or operator must determine the **concentration** ~~LEL~~ using process instrumentation or portable measurement devices…"
[146] EPA-HQ-OAR-2022-0730-0084

PVC production units because the formation mechanism is the same; however, this is clearly inappropriate given the differences in the numerical standards promulgated by the Agency for each of these source categories.

Given the potential differences in chlorine loading and configurations for devices used to control emissions from HON CMPUs that produce chlorinated chemicals, and between HON CMPUs and P&R I and II affected sources, EPA should not finalize the dioxins and furans limit as proposed. The Associations recommend EPA collect additional emissions data from affected units and properly consider the Agency's ability to apply different limits to subcategories of HON units and P&R I and II units as allowed by the CAA. In addition, if EPA decides to finalize dioxins and furans standards, we request the Agency include overlap provisions that would allow facilities subject to existing dioxins and furans standards under other NESHAP to continue to comply with those requirements instead of the requirements under HON, P&R I, or P&R II.

6.3.2 The Associations Do Not Support the Proposed Revisions Requiring All Surge Control Vessels and Bottoms Receivers to Meet the Requirements for Process Vents

EPA is proposing that emissions from surge control vessels and bottoms receivers be controlled if emissions of total organic HAP are greater than 1.0 lb/hr under the premise that emissions from these sources should be considered process vents and not storage vessels. EPA has not provided any documentation justifying this change. Even if surge control vessels and bottoms receivers are better characterized as process vents, a sufficient cost effectiveness evaluation must be provided to support the proposed change. The use of 1.0 lb/hr as the threshold for their control implies that EPA is asserting that the justification provided to support the 1.0 lb/hr threshold for Group 1 process vents is appropriate for surge control vessels and bottoms receivers. That analysis was based on the cost associated with controlling vents that were historically classified as Group 2 process vents and that have emissions of total organic HAP that exceed 1.0 lb/hr. We have identified several issues with that cost effectiveness analysis that were discussed in a previous section. Those same concerns would apply to its use for surge control vessels and bottoms receivers. Additionally, the use of stream characteristics and data for Group 2 process vents to estimate the cost of a control device for surge control vessels and bottoms receivers is not a reasonable approach. The nature of how these sources operate implies that they would require a different approach to sizing a control device than a historical Group 2 process vent. Without information specific to surge control vessels and bottoms receivers, it is not possible to determine whether it is appropriate to use the Group 2 process vent information to justify the same threshold for surge control vessels and bottoms receivers. We request EPA prepare a cost effectiveness evaluation specific to surge control vessels and bottoms receivers to support the proposed change, addressing our previously stated concerns with the benefit analysis the Agency proposed for process vents. If EPA determines that revisions to control applicability thresholds and control requirements for surge control vessels and bottoms receivers are appropriate based on their revised analyses, we encourage the Agency to apply the TRE concept as part of the control applicability threshold determination.

6.3.3 *Repeat Performance Testing Requirements*

EPA is proposing repeat performance testing requirements for process vents that use non-flare control devices to meet the HON standards. Although the preamble only discusses addition of 5-year performance testing for equipment in EO service[147], this is not the extent of the proposed change. Where the rule previously only required initial performance tests, EPA has proposed to update §63.103(b)(1) to specify that subsequent performance tests should be conducted no later than 60 months after the previous performance test. This 5-year repeat performance testing requirement is now referenced at §§63.114(e), multiple places in 63.116, and 63.124(b)(3). EPA should not require repeat performance testing unless there has been a process or control device change, as currently specified at §63.116(b)(3).

The Associations additionally note that some HON-affected facilities meet the rule's emissions limits by use of an air pollution control device that is subject to 40 CFR Part 63, Subpart NNNNN ("National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production"). Subpart NNNNN requires a repeat performance test every five years. 40 CFR § 63.9015(a). The Associations request that EPA revise §§ 63.116(b)(3) and 63.116(d) so that facilities are exempt from periodic testing of any halogen control device that is subject to and periodically tested in accordance with Subpart NNNNN.

6.3.4 *Process Vent Requirements under the Proposed NSPS Standards*

EPA has not adequately supported its proposal to control all process vents by removing the TRE concept, and should retain the TRE concept, including the limited applicability exemption for affected facilities under the NSPS or provide an alternative to exclude low-emitting process vents from applicability.

EPA is proposing to remove the TRE concept contained in NSPS Subparts III, NNN, and RRR from NSPS Subparts IIIa, NNNa, and RRRa[148]. The TRE is currently present in NSPS Subparts III, NNN, and RRR as an alternative emission standard whereby a SOCMI facility must maintain a TRE > 1.0. It is also present in the NSPS as a limited applicability exemption for process vents with TRE > 8.0. The TRE index value has been an integral part of many technology-based air standards since its initial development, serving as a mechanism for determining cost effectiveness

[147] 88 Fed. Reg. 25084.
[148] 88 Fed. Reg. 25087.

and triggering the requirements for process vent control (see, e.g., the preamble to the 1994 HON adoption, which states that the TRE concept is appropriate because it "can be used to reflect all possible combinations of various factors that affect emission rates and likelihood of current control" (59 FR 19416, April 22, 1994) and "would provide consistency between the HON[,] the recently issued CTG for SOCMI process vents.... [and] the applicability criteria for the three SOCMI process vents NSPS" (59 FR 19418)). EPA determined that BSER was 98 percent control (or an outlet concentration of 20 ppmvd at 3% O_2) of sources with a TRE less than or equal to 1.0 when it promulgated these rules.[149]

In the preamble to the proposed rules, although EPA admits they found no change in BSER, EPA concludes the TRE concept should be removed because some SOCMI facilities are voluntarily controlling process vents with TRE > 1.0, the TRE calculation incorrectly assumes a control device only controls one process vent, the TRE calculation is theoretical, complex, uncertain, and difficult to enforce, and removing the TRE concept in its entirety is cost effective. However, all of these reasons or findings are flawed and do not adequately support EPA's proposal for reasons described below. Additionally, while EPA discusses its basis for removing the TRE > 1.0 alternative emission standard, it provides no discussion for why the limited applicability exemption (TRE > 8.0) in the NSPS is proposed to be removed. EPA must explain why this exemption should be removed and provide an opportunity for the public to comment before taking final action to modify or remove it.

Some SOCMI facilities are voluntarily controlling process vents with TRE > 1.0.

The first reason EPA provides to remove the TRE concept is that, in the response to the Section 114 request, EPA found that some facilities were voluntarily controlling process vents even though their TRE index is greater than 1.0. Other facilities indicated they were voluntarily designating their process vents as Group 1 "so that TRE calculations are not required," nor is attendant monitoring and recordkeeping. While some facilities may be controlling process vents with TRE > 1.0, the reason may not be voluntary or to avoid the TRE calculation. For example, facilities may control these process vents to control VOC to comply with state or local regulations or to meet a BACT limit. Regardless of the reason for controlling process vents with TRE > 1.0, the mere fact that *some* process vents with TRE > 1.0 are controlled does not mean that controlling *all* process vents with TRE > 1.0 is BSER. At best, what this means is that controlling a *subset* of process vents with TRE > 1.0 *may* be cost effective. EPA may consider raising the TRE index value to a level that represents cost-effective control, but removing the TRE as an alternative to controlling emissions is not supported by the information cited by EPA.

[149] 88 Fed. Reg. 25132.

The TRE calculation incorrectly assumes a control device only controls one process vent.

The second reason EPA provides to remove the TRE concept is that the basis of the TRE calculation is inconsistent with real-world configuration of air pollution control systems. The TRE calculation measures the resource effectiveness of using a control device to control one process vent. EPA contrasts this with how facilities reported in the CAA Section 114 request that each control device usually controls multiple process vents, and that having a control device control only one process vent is an unrealistic scenario. On this basis EPA "no longer believe[s] that TRE index value accurately represents BSER"[150]. However, EPA does not explain why this discrepancy warrants disqualifying the TRE alternative as BSER. Just because a control device can be designed to control multiple process vents does not necessarily mean that in all cases it is cost effective. If the cumulative emissions from the process vents are small, then even controlling all of them with one control device is not cost effective. In fact, in the same sentence and immediately following EPA's conclusion that TRE is not BSER, EPA finds that "control could be cost-effective even at a TRE index value of greater than 1"[151] (emphasis added) but does not go so far as to conclude it *would* be cost-effective. As with the discussion above, EPA could consider raising the TRE index value, but removing the TRE as an alternative to controlling emissions is not supported by the information cited by EPA.

EPA's assessment for the TRE calculation is theoretical, complex, uncertain, and difficult to enforce.

The third reason EPA provides to remove the TRE concept is that it believes the TRE calculation is theoretical, complex and uncertain, and difficult to enforce. EPA finds that the TRE calculation is complex and uncertain because, in a response to the CAA Section 114 request, one respondent included comments about discrepancies between process simulation modeling runs and actual process conditions and data, but this reasoning has significant flaws. One facility's response to a CAA Section 114 request is hardly a basis to infer that every company views the TRE calculation to be complex and uncertain. Additionally, process simulation modeling is only one of several options to determine TRE calculation inputs. Some of our members use source test results to determine TRE calculation inputs; this approach is neither complex nor uncertain to interpret. The EPA also finds that the TRE calculation is difficult to enforce because it claims that the owners and operators "must determine numerous inputs" to the TRE calculation and verifying those inputs can be problematic. However, this is not always the case. The number of inputs to the TRE calculation is proportional to the number of measurable organic compounds in the vent stream. Some of our members have very few organic compounds in process vents, so the inputs are

[150] 88 Fed. Reg. 25133.
[151] *Id*.

minimal, and if those inputs are determined by other allowed methods (e.g., source tests, permit limits), then verification of these inputs is clearly not problematic. And even though EPA states that the TRE index value "can be" very difficult to enforce because it is "often theoretical," it has offered no examples of when a TRE calculation was challenging for an agency to verify or produced a result that was contrary to actual cost-effectiveness at a facility.

EPA finds controlling process vents irrespective of TRE index values to be cost-effective for the NSPS.

The fourth reason EPA provides to remove the TRE concept is that it believes controlling process vents irrespective of its TRE index value would be cost effective. EPA's cost-effectiveness analysis for the HON is summarized in Table 14 of the preamble. EPA evaluates the cost-effectiveness of three control options. Control Option #1 (EPA's proposal) removes TRE and redefines Group 1 vents. Control Option #2 is the same as Option #1 except the Group 1 vent HAP threshold is lower. Control Option #3 is status quo except the TRE threshold is raised from 1.0 to 5.0. While EPA recognizes that Control Option #3 (to retain the TRE, but at a higher value) is just as cost effective as Control Option #1 (redefines Group 1 process vent and removes TRE), EPA elects to propose Control Option #1 because Control Option #3 would require keeping the TRE concept which is "not desired" because of the three reasons listed above. However as discussed above, those reasons are an inadequate basis to abandon the TRE concept. Therefore, EPA's decision to propose Control Option #1 is arbitrary.

EPA's cost-effectiveness analysis for the proposed NSPS is summarized in Table 18 of the preamble. This table is not accurate and inflates the cost-effectiveness because it does not recognize the spectrum of low-emitting affected facilities that would be subject to control for the first time. For example, one of our members reports the *cumulative* emissions from all affected facilities at each of eight non-HON plant sites is 1-3 tpy VOC, which is at least 95% less than the average emission reduction (65-93 tpy VOC) EPA estimated for *each* non-HON affected facilities at plant sites triggering the NSPS.

Overall, the information cited by EPA clearly does not support removing TRE concept in its entirety. Should EPA continue to consider removing the TRE concept in its entirety, it must not only address the deficiencies described above, but also explain why removing the TRE concept for the SOCMI sector is not arbitrary given no action was taken on the TRE concept in the recent risk and technology review of the Miscellaneous Organic NESHAP, conducted just three years ago.

For the reasons stated above, the Associations recommend EPA either retain the TRE provisions in NSPS Subparts IIIa, NNNa, and RRRa or, alternatively, raise the TRE threshold values or limit applicability of the NSPS to affected facilities at a site whose cumulative VOC emissions are greater than 25 tpy such that the rules would only require control where it is cost effective.

6.3.5 *NSPS Subpart NNNa or RRRa Sources Controlled in a Hazardous Waste Combustor*

EPA allows for HON sources controlled in a boiler or process heater burning hazardous waste to comply with the provisions of 40 CFR Part 63, Subpart EEE rather than complying with the performance test provisions in the HON (see for example §63.116(b)(4). EPA should incorporate the same allowance into 40 CFR Part 60, proposed Subparts NNNa and RRRa to reduce overlapping provisions across rules. Control in a hazardous waste combustor that meets the stringent requirements in Subpart EEE will certainly meet any NSPS control efficiency requirements.

6.3.6 *NSPS Subpart NNN and NNNa: Monitoring Exemptions and Clarifications to Related Definitions*

The proposed Subpart NNNa standards provide for monitoring exemptions for vent streams introduced with primary fuel in boilers and process heaters as listed below:

> *§60.663a(a)(5) Any vent stream introduced with primary fuel into a boiler or process heater is exempt from the requirements specified in paragraphs (a)(1) through (4) of this section.*

Subpart NNNa also provides for waiver of an initial performance test for vent streams introduced with primary fuel in boilers and process heaters as listed below:

> *§60.664a(c) The requirement for an initial performance test is waived, in accordance with §60.8(b) of subpart A of this part, for the following:*
>
> > *(2) When a vent stream is introduced into a boiler or process heater with the primary fuel.*

This proposed exemption of monitoring requirements and the waiver of an initial performance test are consistent with previous waivers and Alternative Monitoring Plans (AMP) granted by EPA for Subpart NNN affected facilities; however, the proposed revisions to Subpart NNN do not include the monitoring exemption and initial performance test waiver listed for the proposed Subpart NNNa and as allowed in previous AMPs and waivers granted by EPA.

We request the revisions to Subpart NNN include these exemptions and waivers which would eliminate the need for the AMPs and waivers for Subpart NNN affected facilities.

We also request clarification of the definition for *Flame Zone*. Both Subpart NNN and the proposed Subpart NNNa include the following definition for Flame Zone:

> *Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.*

Because reference to the flame zone of both boilers and process heaters is made in both Subpart NNN and the proposed Subpart NNNa, we are requesting the definitions be changed to include process heaters.

6.4 Startup and Shutdown Provisions

6.4.1 Provisions to Address Process Vent Requirements During Periods of Startup and Shutdown.

The Associations have determined that work practice standards are needed for startup/shutdown-related transient vent conditions that prevent adequate or safe operation of control devices. These standards are needed for the same reasons, as follows, that EPA has proposed work practice standards for maintenance activities. EPA states that it has proposed maintenance-related standards "because it is 'not feasible to prescribe or enforce an emission standard' for these emissions," and because the startup, shutdown, and malfunction (SSM) requirements have been removed. EPA characterizes the proposed work practice standards as addressing a "separate class of startup and shutdown emissions" for the following maintenance activities: equipment openings; storage vessel degassing; and planned routine maintenance for storage vessels. 88 Fed. Reg. 25159 (III.D.4.a–4.c)

EPA must provide work practice standards for startup/shutdown-related transient vent conditions that are unsafe to control or that cannot be controlled at the efficiency required during all other periods of operation. For example, two facilities subject to the HON report that safe and efficient operation of combustion control devices is dependent on combustible process off-gases that are not always available in the right amount during startup. As a result, the control device might not be at full operating temperature during some period of startup, or some of the gases might need to be vented to atmosphere to prevent conditions of unsafe combustion. Two facilities stated that achieving a safe, steady state condition before introduction of streams to the control device is required during startup because hazardous over-pressurization of vents can occur unpredictably, which could potentially lead to uncontrolled venting. And one facility identified a process stream that, during startup and shutdown only, would add too much air (oxygen) to the control device and needs to reduce oxygen levels prior to introduction to the control to prevent unstable/unsafe combustion. The facility's air permit allows limited venting during startup or shutdown of the process, so long as each occurrence of venting is recorded and the mass of pollutants during periods of startup/shutdown do not exceed a specified mass limit.

A different facility, which produces chlorinated hydrocarbons, is unable to use its thermal oxidizer/scrubbers during startup because of concentration spikes of combustible materials that would cause potentially hazardous combustion upsets. Commensurate work practice standards are needed for startup. During startup, the facility currently and in accordance with its permit routes one or several process vents to a water scrubber. A different process at the same facility must be inerted during its shutdown, and during these periods, the facility routes these inerted vent streams to a water scrubber rather than the oxidizer/scrubber to avoid likely and potentially unsafe combustion upsets in the oxidizer.

Two facilities have identified needs for startup allowances where catalytic oxidizers are used. One of the facilities is unable to operate its catalytic oxidizer during startup of the connected process. During normal operation, the facility prevents overheating of the oxidizer, in part, by addition of a CO_2-containing stream that is generated in a different part of the process. The CO_2-containing stream, however, is not generated by the process immediately upon startup. To avoid overheating during startup, the facility currently vents the gas stream to atmosphere. The other facility is unable to operate its catalytic oxidizer at full efficiency during startup to control a CO_2 removal system. For this facility, the initial concentration of VOC in the process vent stream being controlled is at too low a concentration to maintain the required temperature of the catalytic oxidizer. The flows and concentration needed by the control device are established within a few hours of startup. This facility's air permit allows start-up activities 12 times per year for 10 hours per occurrence. The noted process vent contains less than 0.48 lb/hr of EO, resulting in startup-related emissions of no more than about 55 lb/yr resulting from the 12 or fewer startup bypasses each year.

We also request EPA clarify that the presence of vent and drain valves on process vent lines that lead to a control device do not constitute bypass. These valves are in place to allow for line maintenance, which ensures the continued safe operation of the process.

6.4.2 The Associations Support EPA's Proposed Maintenance Work Practices for Storage Vessels at §63.119(a)(6) with Minor Changes

We generally support EPA's proposal to add work practice standards for degassing storage vessels at §63.119(a)(6). When a storage tank is removed from service, it is necessary to remove residual liquid and vapor prior to entry; however, during preparation for entry there comes a point when it becomes impractical to drain any additional liquid and route remaining vapor through a closed vent system to a control device. Thus, with the removal of SSM requirements, a separate standard to address emissions from degassing becomes necessary.

We request that EPA provide further clarification regarding opening of floating roof storage vessels prior to degassing. EPA should clarify that emissions as a result of vapor space expansion (i.e., breathing emissions) following landing of a floating roof and prior to commencing degassing operations do not constitute a bypass or otherwise a violation/deviation of the existing/proposed standards.

Fugitive emissions associated with the shutdown of floating roof tanks in preparation for degassing are characterized as landing losses that include standing idle losses. Standing idle losses include losses through the breather vent, which is activated when the floating roof has landed to allow the vacuum to break. The resulting vapor space is also subject to breathing losses during the time needed to connect the tank temporary control device to capture and control purge emissions associated with the floating roof storage vessel degassing operation. Additional fugitive emissions may occur during the opening of the storage vessel to make the connections.

EPA states in the preamble:

> *Additionally, in petitions for reconsideration that the EPA recently received on the MON, EMACT standards, the Petroleum Refinery Sector rule, and OLD NESHAP, petitioners asserted that it is necessary to make connections to a temporary control device to control the floating roof storage vessel degassing emissions, which may require opening the storage vessel to make these connections. While we do not believe the current language precludes a facility from taking this step, we are revising the standard to include related language for clarity. Therefore, we are proposing that a floating roof storage vessel may be opened prior to degassing to set up equipment (i.e., make connections to a temporary control device), but this must be done in a limited manner and must not actively purge the storage vessel while connections are made.*

Neither the above description nor the regulatory language explicitly addresses unavoidable HAP landing and standing idle losses associated with floating roof tanks that occur prior to degassing. The Associations interpret the above description and the proposed regulatory language to implicitly allow for such losses and that such losses will not be viewed as a bypass or otherwise as a deviation or violation to the proposed standards and requests that EPA provide confirming clarification of our interpretation.

We also request that EPA promulgate standards to address degassing of storage vessels that contain materials that do not have a lower explosive limit (LEL), or do not have an LEL in the vessel atmosphere. For example, some of our members store chloroform which does not have a LEL.[152] Another example is when a storage vessel containing organic HAP is blanketed with an inert, such as nitrogen, such that oxygen is not present and thus an explosive condition has no potential to exist (and therefore will not register on an % LEL measurement device). We therefore recommend that EPA promulgate an alternative standard such that the storage vessel may be opened after the vapor space organic HAP content has been reduced below 5,000 ppmv, based on the Agency's assertion that this level is equivalent to 10% of the LEL as presented in the preamble to the proposed rule:

> *The Texas permit conditions requiring compliance with 10 percent of the LEL and SCAQMD Rule 1149 control requirement are considered equivalent because 5,000 ppmv as methane equals 10 percent of the LEL for methane.*[153]

6.5 Equipment

6.5.1 The Associations Support the PRD Work Practice Requirements with Necessary Revisions.

Currently, the HON regulates fugitive emissions from PRDs through equipment leak provisions when they remain seated, including returning to a condition of no detectable emissions after a pressure release. The HON does not, however, impose specific requirements on the releases that occur when the PRD actuates; in fact, the current rule expressly treats these venting incidents as malfunctions, which are exempt pursuant to the SSM exemption.

With EPA's proposal to remove the SSM provision from the rule, the Agency must make appropriate provision to authorize venting from PRDs. PRDs are necessary to ensure the continued safe operation of equipment; they are critical safety devices that open only when necessary to prevent damage to process equipment and personnel. As such, they are an integral part of every facility's effort to comply with the general duty to operate in a safe manner at all times and ensure that equipment does not exceed maximum allowed working pressures. Given the purpose and limited use of these devices, EPA appropriately considered "these legitimate safety concerns in deciding what work practices are achievable."[154]

---

[152] https://www.osha.gov/chemicaldata/477
[153] 88 Fed. Reg. 25160.
[154] *See Sierra Club v. EPA* (*Sierra Club III*), 884 F.3d 1185, 1202 (D.C. Cir. 2018).

We agree with EPA's assessment that even at the best performing sources, releases from PRDs are likely to occur[155] and cannot be safely routed to a control device.[156] That conclusion is consistent with our members' experience: pressure release actuation events, while infrequent, will occur even at properly designed and operated sources, including the best performers. Furthermore, given the wide variety of emergency situations that can trigger a PRD actuation, it is impossible to predict which PRDs will release during a given year; a PRD that releases this year may not release for the next decade, while one that has not released in years may release this year.

In the proposal, EPA first evaluated whether different "classes, types, and sizes of sources" existed, and concluded that two classes of PRDs exist: those that are designed to vent through a control system; and those that are designed to vent to the atmosphere. We support this subcategorization because, as EPA notes, PRDs must already be thoroughly evaluated and managed under the site's PSM program, and when a device is not vented to a control under that program, it is usually because of site-specific technical or safety concerns that prevent that device from venting through a control system.

With respect to PRDs that are not designed to vent through a control system, EPA next concluded that a numeric emissions limit was not appropriate for PRD releases, given the unpredictable and short-term nature of the release events. Again, we support this determination. Section 112(h) expressly authorizes the use of work practices when "the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations."[157] Here, EPA evaluated in detail the types of circumstances that result in PRD actuation and concluded that the short and unpredictable venting incidents, together with the widely varying composition and flow rate, made it infeasible to collect samples from these events; furthermore, even if the quantity and composition of the materials released in these events could be accurately measured, those figures would vary dramatically even across a single site. There is no way to establish a specific emissions limit for PRD events that would be appropriate to all regulated PRDs, given the widely varying composition of the materials involved and the differences in operation and underlying causes that trigger any particular PRD actuation.[158]

EPA's determination is further reinforced by the fact that no PRDs within the entire source category are subject to numeric emissions limits. Even states that have stringently regulated PRDs,

---

[155] 88 Fed. Reg. 25157.
[156] EPA-HQ-OAR-2022-0730-0010, pg. 12.
[157] 42 U.S.C. § 7412(h)(2)(B).
[158] *Cf. Sierra Club III*, 884 F.3d at 1199, 1202 (Upholding startup/shutdown provisions in Boiler MACT, where EPA had "determined numeric standards were infeasible because boiler conditions were too variable while heating up and cooling down, and the agency had scant data about those volatile periods" and "EPA had also recognized serious risks of explosions and equipment damage that might result if it required operators to engage pollution controls too early").

such as California, have refrained from attempting to establish numerical emissions limits. Indeed, any attempt to set such a limit using the EPA's standard 99% confidence interval would have to be so high as to be meaningless because of the tremendous degree of variability involved. Furthermore, because these events are triggered by a variety of non-routine process conditions across a variety of different processes, there is no MACT-level technology that can be applied to this category of PRDs to limit emissions to a certain quantity or concentration.

As a result, EPA concluded that the only practical mechanism for regulating emissions from PRDs that are not designed to vent to a control system is through work practice standards. To satisfy MACT requirements, any such work practice standards must be "consistent with" or "comport with" MACT requirements.[159] In other words, once EPA has identified the best-performing sources, EPA must then look to the types of practices used by those facilities to achieve their superior performance.

Again, EPA satisfied this obligation by basing its analysis on the practices used by the "best performers" in the industry to minimize emissions from PRDs that vent to the atmosphere.[160] EPA looked to the most stringent regulations that apply to HON and P&R I facilities: program 3 under its own Chemical Accident Prevention (CAP) Provisions,[161] which the best performers in the industry comply with, along with the comparable OSHA PSM obligations. The Agency further evaluated the most stringent rules that apply to petroleum refineries – those imposed by the Bay Area Air Quality Management District – to determine whether these approaches may also translate to HON and P&R I facilities. Based on its analysis of these requirements, together with company-wide best practices at HON and P&R I facilities, EPA concluded that the "best performers" within the source category have implemented a site-specific program that uses at least three prevention measures, along with a root cause analysis and corrective action in the event of a PRD release. In addition, EPA proposed a limit on the number of releases that would be authorized to ensure that the site's compliance and minimization efforts are effective.

We agree that the approach proposed here is consistent with the Agency's obligations to ensure that sites are subject to "continuous Section 112-compliant standards."[162] At the outset, all PRDs are directly regulated under the MACT-required LDAR program the vast majority of the time (when they are closed). EPA now proposes to impose additional work practice requirements that are both appropriate and the only practical mechanism for limiting emissions from PRDs associated with them opening. The obligation to adopt certain specified prevention measures, as

[159] *See* 42 U.S.C. § 7412(h); *U.S. Sugar*, 830 F.3d at 663; Sierra Club III, 884 F.3d at 1199, 1203.
[160] 88 Fed. Reg. 25156.
[161] 40 C.F.R. §68.215
[162] *Sierra Club*, 551 F.3d at 1027.

determined to be appropriate to a particular unit or site, is comparable to the types of practices required under standard LDAR programs, which have long been deemed to be acceptable "continuous emission standards" under Section 112 – even though, as discussed above, LDAR programs neither require continuous action nor limit emissions from equipment leaks. These types of programs are acceptable because the consistent application of effective work practices will result in lower emissions over time.

It is also critical from an operating perspective that these work practices be as consistent as possible with other regulatory obligations that facilities currently face. As discussed above, PRDs are primarily safety devices; they exist to prevent serious damage to equipment and injury to employees and neighbors that can result from an uncorrected overpressure situation. As such, they are already heavily regulated under both the OSHA PSM program and the EPA CAP program. Any obligations imposed under Section 112 must be consistent with those obligations to the maximum extent possible.

In this case, however, EPA proposes to go even further than the standard LDAR-type program and impose a "one-size-fits-all" limit on the number of PRD releases. A single "repeat" release – one that is the same device that is attributable to the same root cause within the regulated period – is automatically deemed to be a violation. Moreover, a third release from the same device for any reason during the same three-year period is also a violation, even if each of those incidents would independently be considered an exempt malfunction under the current regulations.

We do not believe that any limit on the number of PRD releases is either necessary or appropriate. The HON standards routinely allow containers and other equipment to be opened as necessary for safety reasons, with no constraints placed on the number of openings allowed.[163] LDAR programs have consistently been considered to be an acceptable MACT standard, even though those programs generally do not limit either the number of leaks "allowed" at a particular component or the quantity of emissions associated with those leaks. Indeed, in the Boiler MACT, the court concluded that the obligation to perform an energy assessment was an appropriate MACT standard, even though the assessment was only a one-time obligation, and even though facilities were not required to implement any of the findings.[164]

Should EPA proceed with its proposed limit on the number of authorized PRD venting events, however, we believe that EPA's decision to allow one or two releases under the conditions set forth in the regulations is consistent with its obligations under Section 112. As discussed above, PRD releases occur at even the best-managed facilities, usually as the result of a malfunction that

[163] *See*, *e.g.*, 40 C.F.R. § 63.135(c)(2).
[164] *See* U.S. Sugar, 830 F .3d at 615-616

is beyond the site's control. These events must be accommodated in some manner because of the critical safety function PRDs serve. At the same time, because these events are rare, it is difficult to predict exactly how often these events are necessary in response to a malfunction. Taking this variability into account and authorizing more than a single such event is well within the Agency's authority under Section 112 to set standards that are achievable in practice.[165]

We note, however, our concerns detailed in Section 6.1.2 of these comments regarding EPA's decision not to incorporate provisions addressing *force majeure* events. We are also providing the following additional comments regarding the standards for PRD releases.

6.5.2 The Assocations Support EPA's Conclusion that Routing all PRD Releases to a Control Device is Not Cost-Effective

The Associations reviewed EPA's "beyond-the-floor" analysis of an option requiring all PRDs to be vented to a control system.[166] We acknowledge that some HON facilities route certain PRDs to a control system; however, EPA is correct that routing all PRDs to control would not be cost-effective. Both the piping and the control device would be required to handle flow significantly larger than typical process vents. For example, one member has estimated that controlling all PRDs at one of its facilities would require a capital expenditure of 250,000 to one million dollars. Additionally, the control device would be required to operate in an indefinite "stand-by" mode to accommodate unexpected and emergency releases (requiring significant amounts of fuel and generating secondary combustion emissions). We also generally agree that EPA's cost analysis performed for MON PRDs translates to HON and P&R I PRDs and that the costs to control all PRDs would exceed $80 million per ton of HAP reduced. However, EPA's cost analysis does not acknowledge that PRDs on halogenated streams would have to be routed to a thermal oxidizer equipped with both acid gas and dioxin/furan controls, making the cost to control these types of PRDs even more expensive.

6.5.3 EPA Should Clarify that PRDs in Light Liquid Service are Exempt from the Pressure Release Management Work Practices in Proposed §63.165(e)(3)

The associations request EPA clarify that the pressure release management work practices do not apply to PRDs in light liquid service by revising proposed §63.165(e)(5)(i) to read "Pressure relief devices in liquid service…"

---

[165] *Cf. U.S. Sugar Corp. v. EPA,*579 F.3d 579, 637 (D.C. Cir. 2016) [upholding EPA approach establishing standards based on a statistical method that estimated "an emissions limit based on a specified level of confidence such that the average best performer would not be expected to exceed the limit a specified number of times" (quotation omitted)].
[166] EPA-HQ-OAR-2022-0730-0010, pg. 15.

In the preamble to the proposed rule, EPA indicates that they are exempting PRDs in heavy liquid service because:

> *Any HAP release to the atmosphere from a PRD in heavy liquid service would have a visual indication of a leak and any repairs to the valve would have to be further inspected and, if necessary, repaired under the existing equipment leak provisions.*[167]

EPA appears to be referring to the existing standards under §63.169 which are as follows:

> (a) *Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices* ***in light liquid or heavy liquid service***, *and instrumentation systems shall be monitored within 5 calendar days by the method specified in* § 63.180(b) *of this subpart if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in paragraphs (c) and (d) of this section, it is not necessary to monitor the system for leaks by the method specified in* § 63.180(b) *of this subpart.*
>
> *(b) If an instrument reading of 10,000 parts per million or greater for agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million or greater for all other pumps (including pumps in food/medical service), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.*
>
> *(c)*
>
> *(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.*
>
> *(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.*
>
> *(3) For equipment identified in paragraph (a) of this section that is not monitored by the method specified in § 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.*
>
> *(d) First attempts at repair include, but are not limited to, the practices described under §§ 63.163(c)(2) and 63.168(g) of this subpart, for pumps and valves, respectively.*

(Emphasis added). In response to a request that EPA exempt PRDs in light liquid service from the pressure release management work practices in the MON, EPA disagreed stating:

---

[167] 88 Fed. Reg. 25157.

> *…releases from a PRD in heavy liquid service would have a visual indication of a leak and any repairs to the valve would have to be further inspected and, if necessary, repaired under the existing equipment leak provisions. This reasoning would not extend to PRDs in liquid service.*[168]

EPA's assertion that the reasoning applied to PRDs in heavy liquid service would not apply to PRDs in light liquid service is incorrect. The current and proposed definition of "in light liquid service" at §63.101 requires that the liquid meet the following conditions:

> *(1) The vapor pressure of one or more of the organic compounds is greater than 0.3 kilopascals at 20 °C;*
> *(2) The total concentration of the pure organic compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C is equal to or greater than 20 percent by weight of the total process stream; and*
> *(3) The fluid is a liquid at operating conditions.*

Because the fluid must be a liquid at operating conditions, a leak or release from a PRD would be easily identified by the presence of the liquid on/around the PRD. Additionally, if the fluid is a vapor at atmospheric conditions (i.e., the process is operated at an elevated pressure or reduced temperature) a leak or release would be readily identified by the presence of boiling liquid. It is clear that during the development of the original HON rule, EPA determined PRDs in light liquid service would have readily identifiable sensory indications of a leak, just as for PRDs in heavy liquid service, thus inclusion of PRDs in light liquid service in §63.169. Furthermore, the same requirements to inspect and repair, if necessary, PRDs in heavy liquid service apply to those in light liquid service as demonstrated by the rule language from §63.169, which EPA is not proposing to revise. Thus, the Associations request that EPA include PRDs in light liquid service in the list of exempt PRDs at proposed §63.165(e)(3)(i).

6.5.4 EPA Should Clarify the Control Requirements for PRDs Routed to a Control Device, Process, Fuel Gas System, or Drain System

Proposed §63.165(e)(4)(ii) states:

> *Before the compliance dates specified in §63.100(k)(10) of subpart F of this part, both the closed vent system and control device (if applicable) referenced in paragraph (e)(4)(i) of this section must meet the applicable requirements specified in §63.172.*

---

[168] EPA-HQ-OAR-2018-0746-0200, response to comment 114.

A plain reading of this requirement indicates that only PRDs that were in compliance with the requirements of §63.172 prior to the compliance date qualify for the exemption from paragraphs §63.165(e)(1) through (3). It appears to be an oversight that EPA has proposed not to allow PRDs that are either installed following the compliance date, or for which facilities install controls after the compliance date to be exempt from the monitoring and work practice standards. We recommend removing the phrase "Before the compliance dates specified in §63.100(k)(10) of subpart F of this part," to rectify this issue.

6.5.5 EPA Should Not Prohibit PRD Releases under the Proposed NSPS IIIa, NNNa, and RRRa.

The Associations are concerned with EPA's prohibition of PRD releases under the newly proposed NSPS IIIa, NNNa, and RRRa.[169] In the Agency's "CAA 111(b)(1)(B) review for the SOCMI air oxidation unit processes, distillation operations, and reactor processes NSPS subparts III, NNN, and RRR" memorandum,[170] EPA indicated a review of the RACT, BACT, and LAER database revealed the following:

> *At least one facility has requirements for pressure relief devices related to reactor processes vents such that no pressure relief device may emit directly to the atmosphere under any circumstance, and the capture system must be inspected regularly to verify integrity.*

In Appendix A of the memorandum, EPA includes RBLC database ID TX-0813[171] for the "Linear Alpha Olefins Plant," which is operated by INEOS Oligomers USA, LLC. The control method description included by EPA reads:

> *All process vents and pressure relief devices must vent to a control device specified by the permit (flare or thermal oxidizer). No pressure relief device may emit directly to the atmosphere under any circumstance. The capture system must be inspected regularly to verify integrity.*

A review of the relevant RBLC record and the facility's air permit indicates that these conditions were established as LAER, or "lowest achievable emission rate," as part of Nonattainment New Source Review (NNSR) application. LAER is defined at 40 CFR § 51.165(a)(1)(xiii) as:

---

[169] *See* proposed 40 CFR § 60.612a (b)(1), § 60.662a(b)(1), and § 60.702a(b)(1).
[170] EPA-HQ-OAR-2022-0730-0011.
[171] This RBLC entry is actually TX-0811: the reference to TX-0831 appears to be an inadvertent error.

…The more stringent rate of emissions based on the following:

> *(A) The most stringent emissions limitation which is contained in the implementation plan of any State for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or*
>
> *(B) The most stringent emissions limitation which is achieved in practice by such class or category of stationary sources. This limitation, when applied to a modification, means the lowest achievable emissions rate for the new or modified emissions units within or stationary source. In no event shall the application of the term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under an applicable new source standard of performance.*

A LAER analysis does not consider economic, energy, or other environmental factors. LAER is only considered unachievable if the cost of control is so great that no major source could ever be built or operated – a very high hurdle to demonstrate.

As EPA points out in their memorandum, CAA Section 111(b)(1)(B) requires EPA to periodically review and, as appropriate, revise NSPS standards. As EPA goes on to describe, CAA Section 111(a)(1) stipulates that such a standard:

> *reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.*

This level of control is commonly referred to as "BSER" or "best system of emission reduction." By equating a single LAER determination to BSER and not performing any additional analysis, EPA has ignored the statutory requirements of CAA Section 111(a)(1) in that the Agency did not adequately account for the cost of achieving reductions, nor did the Agency consider non-air quality health and environmental impacts and more specifically, energy requirements. The only analysis EPA uses to justify the proposed change is the identification of a single LAER condition in the RBLC database. EPA did not include any discussion related to cost or emissions reductions as a result of the proposed change, either in the supporting memorandum or Table 17 of the preamble.[172]

The Agency does, however, present the cost-effectiveness of routing PRDs to control later in the

[172] 88 Fed. Reg. 25135.

preamble. At 88 Fed. Reg. 25,158 the Agency states:

> *We also considered requiring all PRDs to be vented to a control device as a beyond-the-floor requirement. While this would provide additional emission reductions beyond those we are establishing as the MACT floor, these reductions come at significant costs. For example, the EPA estimated that the capital cost for controlling MON PRDs ranged from $2,540 million to $5,070 million, and the annualized cost ranged from $330 million to $660 million; and the incremental cost effectiveness for requiring control of all MON PRDs that vent to the atmosphere compared to the requirements described above exceeded $80 million per ton of HAP reduced (see 84 FR 69182, December 17, 2019). Consequently, we conclude that this is not a cost-effective option.*

Given that EPA correctly concluded it is not cost-effective to route all PRDs to control under their CAA Section 112(d)(2) and (d)(3) review, it is unclear how the Agency could presume such a requirement would be cost-effective as BSER and appropriate to establish as an NSPS requirement. Further, as previously stated, the Agency also gives no consideration to energy requirements even though the previous analysis on which it relies for determining cost-effectiveness under CAA Section 112(d)(2) and (d)(3) quantifies both anticipated fuel use and cost. Disregarding its own assertion that "there may be certain PRDs that absolutely cannot be routed to controls due to freezing or plugging issues,"[173] the Agency unnecessarily proposes to establish the BSER for PRDs as equivalent to one facility's LAER determination without proper consideration to cost, other impacts, or even technical feasibility.

Facilities with PRDs on halogenated vent streams would have to route PRD releases to a thermal oxidizer that would also need acid gas and dioxin/furan emissions controls. Thermal oxidizers used by chlorinated compound producers typically operate with a much narrower range of inlet flows and compositions than flares. There are concerns that routing PRDs with high discharge rates to an existing thermal oxidizer could result in a flame out and higher emissions than would otherwise have resulted from the PRD venting to the atmosphere for a short period of time.

We additionally note that one of our members has determined that it would need to replace its existing reactors to meet the requirement of no PRD emissions. This facility's air oxidation reactors have rupture discs as PRDs, and swings in air supply can cause a rupture disc to fail. Resulting emissions are very low, far below 100 lbs VOC per event, because interlocks cut the reactor feed almost instantaneously. Add-on controls are not possible for this reactor configuration, meaning that the reactors would need to be replaced, at a cost effectiveness of replacing one reactor of $2,100,000,000 / ton VOC.

---

[173] EPA-HQ-OAR-2022-0730-0010.

To overcome the aforementioned gaps in EPA's proposal, the Associations recommend EPA revisit its BSER analysis for PRDs and consider the inclusion of work practice standards similar to those proposed under §63.165(e)(3) instead of an outright prohibition of PRDs routed to atmosphere via designation of any release as a violation. The work practice standards provide an effective framework for managing and reducing releases from all PRDs, including those that cannot be routed to control devices due to technical limitations, without imposing a requirement for overly expensive control devices that will result in secondary emissions and unnecessary energy consumption due to the need to operate on stand-by at all times.

6.5.6 EPA has not Accurately Accounted for Costs to Install Necessary PRD Monitoring Equipment

We are concerned that EPA has not accurately accounted for the cost of installing necessary monitoring instrumentation for compliance with the proposed PRD work practices. The number of PRDs affected per facility was apparently underestimated by EPA for facilities that utilize thermal oxidizers/incinerators (e.g., chemical manufacturing facilities with halogenated streams that require post-combustion scrubbers) rather than flares for controlling emissions from PRDs. Due to their method of operating and controlling emissions, flares typically have a wider operating range than thermal oxidizers do. Thus, flares can more easily accommodate inlet streams that were not part of the control system's original design. Facilities that must utilize thermal oxidizers/incinerators (e.g., facilities with halogenated streams) may have many times more PRDs routed to atmosphere than facilities without halogenated streams.

Monitoring costs were underestimated for facilities with large numbers of PRDs. Additionally, EPA underestimated the cost of adding monitors for each PRD. The actual cost of adding the required monitoring to a PRD is expected to be $5,000 to $10,000 per PRD due to the cost of not only the monitoring equipment but also additional infrastructure required. Adding monitoring for each PRD includes not only the cost of the monitoring equipment and installation but also the cost of the infrastructure to support the monitoring. For a facility that has only a few PRDs subject to proposed monitoring, the infrastructure costs may be relatively low because of the technology that can be used to transmit data for small numbers of monitors and the lesser impact on digital control system (DCS) and process data historian configurations. However, the scope of additional infrastructure is much different for a facility that has hundreds of PRDs that require adding monitors due to the necessity of installing communications for hundreds of PRD monitors instead of half a dozen. Additionally, incorporating hundreds of PRD monitors and alarms into the control room infrastructure is an exponentially more complicated and expensive task than incorporating a half dozen.

One facility reported having 480 atmospheric gas/vapor and light liquid PRDs in HON CMPUs, which would cost an estimated $2.4 to 4.8 million for installing monitoring, and another reported approximately 400 gas/vapor and light liquid PRDs, costing an estimated $2 to 4 million for installing monitoring. Other facilities reported over 100 PRDs per facility that would require monitoring under the proposed HON revisions.

Based on the above, we request EPA revise their impacts analysis as part of the final rule. Furthermore, with the apparent underestimation of the number of potentially affected PRDs for facilities that utilize thermal oxidizers/incinerators (e.g., chemical manufacturing facilities with halogenated streams that require post-combustion scrubbers) rather than flares for controlling emissions from PRDs, supply of monitoring equipment is a concern for even a three-year implementation window. Additionally, some PRDs may require extended unit shutdowns to install the proposed monitoring instrumentation. We request EPA consider these challenges in determining the compliance timeline for the final rule for all the proposed revisions, including those revisions to address emissions of EO and fenceline monitoring requirements, as each required change must often be addressed by a core group of staff at facilities.

6.5.7 EPA Should Not Finalize Annual Connector Monitoring in NSPS VVb.

EPA proposes to require annual connector monitoring at a leak definition of 500 ppm, with skip periods, as part of proposed NSPS Subpart VVb. In Table 24 of the preamble, EPA states that the cost-effectiveness of this option is $3,400 per ton of VOC reduced; however, EPA's cost analysis does not accurately reflect the true cost of connector monitoring. Additionally, EPA's analysis overstates the emissions reductions resulting in favorable cost-effectiveness. Correcting EPA's analysis indicates that the proposed option is not cost-effective. We have the following comments to revise the analysis:

- Annual administrative costs are not properly included.

  EPA has failed to include in its cost analysis a major component of administrative costs for an LDAR program: management of change. This is particularly important for chemical manufacturing processes. Typically, these process units undergo continuous improvement and maintenance, which inevitably result in changes in the number, size, and location of connectors. The LDAR cost associated with a project that just adds connectors would be captured in EPA's estimate of initial costs. However, there are projects that result in replacement of pipelines with different size pipes or re-route pipelines. These changes typically require technicians to mark-up revisions to process diagrams in the field, draftsmen to update drawings, and a technologist to update the

LDAR software. Other examples of added administrative costs are to update the LDAR database when connectors are insulated or de-insulated since insulated connectors are exempt from monitoring or to deactivate or reactivate components that move in and out of HAP service due to process changes. A member company estimates an average of 6 hours of LDAR labor associated with each of these projects, approximately half of which would be saved if connectors were not included. Based on that member company's experience with compliance with the rules that require connector monitoring, they estimate 5 projects a year for a process unit with approximately 1,000 connectors. Based on this information, a reasonable estimate of administrative time to cover management of changes is an additional 15 hours per year per 1,000 connectors.

Making this change to the analysis changes the overall cost-effectiveness to $3,580 per ton.

- <u>Unsubstantiated escalation of connector emission rates.</u>
  Underlying EPA's analysis is an assumption that the uncontrolled leak frequency for connectors should be inflated by a factor of 1.7. EPA's calculations are based on an average emission rate for connectors of 0.000307 kilogram per hour per source (kg/hr/source) which is taken from a 2011 memo related to development of the Uniform Standards rule (never promulgated). That memo references an EPA Enforcement Alert from 1999 as evidence that industry reported leak rates are inaccurate. However, that memo describes findings related to a comparison of industry monitoring to National Enforcement Investigations Center monitoring for valves at refineries. We do not agree there is sufficient evidence to inflate the uncontrolled leak rates by the 1.7 factor for connectors at chemical manufacturing units. Removing this factor results in a baseline emission rate of 1.86E-04 kg/hr/source (i.e., ((0.047*0.360*~~1.71~~/100)+1.7E-05)

  Making this change to the analysis along with the previous comment changes the overall cost-effectiveness to $30,700 per ton.

In consideration of the corrections above, the cost to add connector monitoring to NSPS VVb is in excess of $30,000 per ton of HAP reduced, which is clearly not cost-effective; therefore, EPA should not include annual connector monitoring as part of the revisions to NSPS VVb.

6.6 Monitoring for Adsorbers that Cannot be Regenerated and Regenerative Adsorbers that are Regenerated Offsite

EPA is proposing to add monitoring requirements at §63.114(a)(5)(v), 63.120(d)(1)(iii), 63.127(b)(4), and 63.139(d)(5) (for HON), and 63.484(t), 63.485(x), and 63.489(b)(10) (for P&R I) for adsorbers that cannot be regenerated and regenerative adsorbers that are regenerated offsite. We are providing the following comments for EPA's consideration in the final rule.

6.6.1 EPA's Proposed Changes for Adsorbers Must be Evaluated Under CAA 112(d)(6)

Although EPA describes the revisions as adding monitoring requirements, the Agency's proposal to require dual adsorbent beds in series is, in fact, an equipment standard and as such must be evaluated under CAA 112(d)(6). EPA's monitoring cost analysis[174] is incorrect and falls short of the cost-effectiveness analysis required as part of CAA 112(d)(6). EPA can only show that this requirement is cost effective if the cost of carbon replacement and O&M for the second bed is not included. EPA reasons that the requirements would only require a second adsorber to be purchased earlier than it would have under previous rules and that the second adsorber is just a backup. The cost analysis is not valid: EPA has not considered the additional engineering, purchase, permitting, installation and maintenance of duct work or piping, sampling ports, and support structure for a second adsorber at those facilities that currently only use a single adsorber or multiple parallel adsorbers. EPA has also failed to consider that adding a second bed in series may very well require relocation of the adsorber system due to a site's existing footprint. EPA's analysis does not consider the fact that adding a second bed in series will increase the pressure drop through the vent system and will require evaluation and possible replacement of the existing fan/blower system. Also, EPA has not accounted for costs related to the initial performance test or design evaluation, and the ongoing daily, weekly, and/or monthly monitoring. Had EPA considered these costs in comparison to the expected emissions reductions (which are none) the Agency would have concluded the proposed equipment standard is not cost-effective, especially for temporary adsorbers (e.g., systems used for less than 6 months) and small adsorbers that infrequently need replacement. In fact, in its Scenario 1 presented in the Monitoring Cost Analysis Memo, EPA calculates a cost effectiveness of $81,612/ton for a second bed including canister replacement and $70,591/ton for a second bed including carbon replacement based on 0.21 tpy HAP removal. Therefore, EPA should not promulgate the proposed dual bed standard.

If EPA can justify requiring dual bed systems, we request EPA provide three years for facilities to demonstrate compliance. As described above facilities will be required to design, construct, and

---

[174] EPA-HQ-OAR-2022-0730-0004.

test new equipment to implement the proposed changes. The effort and time required to comply with the requirements is much greater than simply ordering a new bed as suggested in the analysis.

6.6.2 EPA Should Reference Existing Rules Instead of, or as an Alternative to, the Proposed Requirements in §63.114(a)(5)

Our members operate a variety of facilities and our members indicate they have operations currently subject to other NESHAP that already contain monitoring requirements for non-regenerative adsorbers and adsorbers that are regenerated off-site. These rules include the Off-Site Waste and Recovery Operations NESHAP, the OLD NESHAP, and the Benzene Waste Operations NESHAP (BWON). We recommend EPA allow single bed systems and adopt the monitoring requirements in these rules because they provide compliance assurance without the unnecessary burden imposed by EPA's proposed revisions to the HON standards. Both the OLD NESHAP and the BWON allow facilities to either continuously monitor the concentration of organics in the adsorber outlet or replace the adsorbent on a schedule determined during the design evaluation. Additionally, neither of these rules require dual beds in series, but these rules do not prohibit such a configuration or other configurations. To alleviate sampling burden and allow for additional flexibility in equipment design, we request EPA incorporate the requirements from the OLD NESHAP and/or BWON instead of, or as an alternative to, the proposed requirements in §63.114(a)(5). If EPA decides not to include these alternatives, at the least, we request EPA incorporate additional flexibility to allow facilities to use more than two beds in series.

6.6.3 EPA Should Exempt Temporary and Small Adsorbers from the Dual Bed and Monitoring Requirements

As described above, the requirement to operate temporary nonregenerative and regenerative adsorbers that are regenerated offsite as dual beds in series is likely not cost-effective and should be exempted from the proposed requirements. Facilities typically operate these temporary systems during periods of maintenance on equipment and control devices. These temporary systems are generally used for periods of less than six months at a time. The only requirement for such systems should be a record demonstrating the bed life is appropriate for the maximum expected emissions loading. Small adsorbers that are changed infrequently and adsorbers that are operated solely as back-up control devices should also be exempted on the basis of the requirements not being cost-effective. These types of systems could be exempted on the basis that they are operated no more than some percentage of the minimum potential saturation time.

6.6.4 The Associations Request EPA Clarify the Initial Performance Test or Design Evaluation Requirements

The proposed provisions in §63.114(a)(5)(v) require either an initial performance test or design evaluation of the adsorber. The language also requires facilities to establish the breakthrough limit of the system. If EPA promulgates a requirement to operate a series of dual beds, we request EPA clarify that existing dual bed systems which have already completed an initial performance test or design evaluation under the HON, or other applicable rules such as 40 CFR Part 63, Subpart SS, are not required to repeat testing or the design evaluation as such a requirement would be duplicative and represent unnecessary burden.

6.6.5 EPA Should Clarify the Adsorber Bed Monitoring Requirements.

We request that EPA clarify that the monitoring requirements in proposed §63.114(a)(5)(v)(C)(2) are based on actual hours of operation of the bed. Some adsorber systems are operated intermittently and therefore monitoring without regard to actual operation represents unnecessary burden and expense.

6.6.6 EPA Should Allow the Use of Detector Tubes as an Alternative to U.S. EPA Method 21 and Method 25A.

We also request EPA incorporate additional flexibility into the monitoring provisions. We recommend EPA allow the use of detector tubes that are commonly used to indicate breakthrough, or potential breakthrough by sampling the flow at a sample point some fraction through the bed for a specific compound (e.g., benzene). These tubes reduce costs by replacing instrument monitoring while offering continuous monitoring of bed performance. We recommend EPA allow detector tubes by simply removing reference to specific monitoring methods in §63.114(a)(5)(v)(B). EPA should not require Method 21 or Method 25A as proposed. Method 21 is designed to measure equipment leaks in a relatively static volume of air, not a vent stream like the outlet of an adsorber. Additionally, both Method 21 and 25A measure total organic compounds, not HAP: therefore, the proposed requirements do not allow a source to demonstrate compliance based on HAP, which are the pollutants regulated by the HON standards.

6.7 Compliance Timeline

6.7.1 The Associations Support EPA's Proposal of a Three-Year Compliance Timeline for Revisions Proposed Under CAA Section 112(d)(2), (3), and (d)(6).

EPA is proposing to provide three years to comply with the changes proposed under CAA Section 112(d)(2), (3), and (d)(6). Based on our members' experience implementing similar changes included in the Refinery Sector Rule, EMACT, MON, and OLD, we agree that three years are warranted. Facilities need time to comply with revised regulatory requirements because they must review the new requirements, develop a plan to comply with the new requirements, determine if process changes or additional controls are needed, engineer and implement any process changes or additional controls, determine if new monitoring equipment is needed to meet the new flare monitoring requirements, install the new monitoring equipment, determine if an air permit application is needed, prepare and submit the permit application, obtain the air permit approval from the agency, revise regulatory compliance plans and procedures, update recordkeeping and reporting procedures, and roll out new requirements to facility staff. The time needed to comply includes addressing the changes EPA is proposing as a result of its removal of the SSM provisions. In addition, as mentioned above, if the fenceline monitoring provisions are maintained, the compliance timeline should be revised to allow adequate time for development and implementation for the facility and the Administrator.

As noted earlier, it is a significant effort to understand the changes that EPA is making to the SOCMI rules. The rules are already complicated to understand because there are many cross references, but there are several instances in the proposal that would benefit from revision for clarity and ease of comprehension. For example, instead of inserting language in the middle of a section stating certain paragraphs no longer apply after a certain date, EPA should insert language at the beginning of a section that provides a list of the requirements within the section that do not apply after a certain date. EPA should ensure that the final revised rule meets its mandate for plain writing such that affected facilities can understand which existing requirements will sunset and what new requirements will take their place.[175] EPA must also ensure that references in the final rule are correct so readers can ascertain requirements. For example, §63.100(k)(10)(i) refers to a §63.107(h)(9)(ii) that does not exist. There are also two subsections (k) at §63.181. If the final rule is difficult to read and includes reference errors, this will further serve to delay compliance planning.

6.7.2 *EPA Should Allow Three Years for Compliance with Standards Proposed under CAA Section 112(f).*

EPA is proposing at §63.100(k)(11) and §63.481(o) that facilities must be in compliance with the standards addressing risk from EO and chloroprene within two years following the publication of the final rule.

The proposed rule would require companies to complete sampling and analysis on an array of process vents and heat exchange systems, in addition to reviewing information for equipment and storage tanks to determine whether sources are in EO service. Once sources are identified,

[175] https://www.epa.gov/web-policies-and-procedures/plain-writing.

time is required to review the performance of existing control devices to determine whether existing controls can meet the emissions standards. Additional time is needed to engineer, order, install, and commission any new controls. Due to the reactive nature of EO and associated process safety requirements an appropriate amount of time and process engineering expertise is needed to properly engineer controls and associated process control systems to ensure worker and community safety. Further time is needed to conduct performance testing, make necessary notifications, and modify existing permits.

Consideration must also be given to the scope of changes EPA is proposing under CAA Section 112(d)(2), (3), and (d)(6) that will be required in addition to the changes under CAA Section 112(f), which as noted previously, EPA has voluntarily considered as part of this rulemaking and thus is not bound by statue to require a 3-year compliance timeline. According to EPA's impact analyses included in the rulemaking docket, facilities will be required to install new closed vent systems, control devices, monitoring equipment, and develop new standard operating procedures, recordkeeping templates, and reporting methodologies. These activities will require extensive time commitments from the same personnel responsible for implementing changes to address emissions of EO and chloroprene. EPA must consider the proposed changes as a whole when determining the appropriate compliance timeline.

6.8 Revision of NSPS Subpart VV and VVa's Definition of "Process Unit"

The Associations support EPA's proposed revision of the definition of "process unit" in NSPS Subparts VV and NSPS VVa, with a correspondingly consistent definition of the same term proposed for NSPS Subpart VVb. Eliminating the phrase that a process unit "includes all equipment as defined in this subpart" ensures no expansion of applicability of the regulations to previously uncovered facilities.

We additionally request that EPA correct a presumed error in its proposed revision of the definition of "capital expenditure" in NSPS Subpart VVa at 40 CFR § 60.481a. EPA proposes revised values for "X," which is a variable used to calculate "percent of replacement cost" (designated as "Y"). Specifically, EPA proposes a value of "1982" for "X" for owners or operators "that start a new, reconstructed, or modified affected source prior to November 16, 2007." However, this results in a negative value for "Y" (that is, -0.89, or 1.0 – 0.575log(1982)], being effectively an indeterminant outcome for calculation of the adjusted annual asset guideline repair allowance.

6.9 Overlap Provisions for New SOCMI NSPS

We are concerned about the implications of potential overlap of the MON, the NESHAP for Pesticide Active Ingredient Production, and other NESHAP with EPA's proposed NSPS IIIa, NNNa, and RRRa. The aforementioned NESHAP currently contain overlap provisions that address NSPS III, NNN, and RRR. For example, the language at §63.2535(h) states:

> *Compliance with 40 CFR part 60, subpart DDD, III, NNN, or RRR. After the compliance dates specified in § 63.2445, if you have an MCPU that contains equipment subject to the provisions of this subpart that are also subject to the provisions of 40 CFR part 60, subpart DDD, III, NNN, or RRR, you may elect to apply this subpart to all such equipment in the MCPU. If an MCPU subject to the provisions of this subpart has equipment to which this subpart does not apply but which is subject to a standard in 40 CFR part 60, subpart DDD, III, NNN, or RRR, you may elect to comply with the requirements for Group 1 process vents in this subpart for such equipment. If you elect any of these methods of compliance, you must consider all total organic compounds, minus methane and ethane, in such equipment for purposes of compliance with this subpart, as if they were organic HAP. Compliance with the provisions of this subpart, in the manner described in this paragraph (h), will constitute compliance with 40 CFR part 60, subpart DDD, III, NNN, or RRR, as applicable.*

With EPA's proposed amendments to the NSPS rules, it appears that such overlap provisions will be invalidated for any constructed, reconstructed, or modified affected facilities that become subject to NSPS IIIa, NNNa, or RRRa. The affected facilities would then be required to comply with two rules, potentially with conflicting requirements. To address this scenario, we recommend EPA include the following language in the final NSPS rules:

> *Each Affected facility that has equipment subject to both this rule and regulations promulgated under 40 CFR Part 63 (i.e., NESHAP) may elect to comply with the overlap provisions of the NESHAP as a means to demonstrate compliance with this NSPS rule provided the NESHAP rule has specified overlap provisions for compliance with NSPS NNN, RRR, and III.*

****

Thank you for your consideration of these comments. Please feel free to contact ACC at 202-249-6423 or Brendan_Mascarenhas@americanchemistry.com, AFPM at 202-457-0480 or LBellas@afpm.org, USTMA at 202-682-4836 or samick@ustires.org, and VI at 202-765-2179 or ddecaria@vinylinfo.org if you have questions or need more information.

Sincerely,

Brendan Mascarenhas
Director, Regulatory and Technical Affairs
American Chemistry Council

Leslie Bellas
Leslie Bellas
Vice President, Regulatory Affairs
American Fuel & Petrochemical Manufacturers

Sarah Amick
Senior Vice President and Senior Counsel
U.S. Tire Manufacturers Association

Domenic Decaria
Vice President, Regulatory and Technical Affairs
The Vinyl Institute

Attachment 1
Flare Parameters for TCEQ Modeling Approach

Attachment 2
Recommended Revisions to HEM4 Inputs for Selected Facilities (Microsoft Excel File)

Attachment 3
Title V Operating Permit Excerpts for Facility 7445611

Attachment 4
HON Source Category Revised Risk Analysis