



American Coke and Coal Chemicals Institute

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October 2, 2023

VIA ELECTRONIC MAIL

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

Re: Comments of the Coke Oven Environmental Task Force (COETF) on the Proposed Rule National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, and Coke Oven Batteries; Residual Risk and Technology Review, and Periodic Technology Review (Docket Nos. EPA-HQ-OAR-2002-0085, EPA-HQ-OAR-2003-0051)

Dear Dr. Jones and Mr. Moeller:

Enclosed please find the comments of the Coke Oven Environmental Task Force (COETF) regarding the Proposed Rule National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, and Coke Oven Batteries; Residual Risk and Technology Review, and Periodic Technology Review, 88 Fed. Reg. 55858 (Aug. 16, 2023) (the "Proposed Rule").

The COETF was formed by the American Iron and Steel Institute (AISI) and the American Coke and Coal Chemicals Institute (ACCCI) in 1996 to address major environmental issues affecting the byproduct recovery coke industry collaboratively. The COETF represents all 4 companies that operate byproduct recovery coke plants in the U.S. These 4 companies operate a total of 6 plants that produced nearly 7.3 million tons of metallurgical coke in 2022, which is a vital ingredient to making the steel that is the backbone of U.S. investments in infrastructure, electrification of the transportation sector, and our national defense.

All 4 of the COETF's member companies will be directly regulated by the final rule promulgated by EPA. Our members will also be impacted by the policy and legal decisions made by EPA in the final rule. Therefore, the COETF seeks to ensure that EPA uses reasonable and defensible risk assessment and technology review methodologies and data and that any residual risk associated with HAP emissions remaining after the application of maximum achievable control technology (MACT) is addressed appropriately, while avoiding burdensome changes to existing emission limitations when changes are not necessary to protect public health.

The COETF and its members have worked over the past 8 years to provide EPA with the information, data, and analysis needed to prepare a legally sound and technologically achievable proposed rule. The COETF recognizes the time consuming and complicated technical work that underlies the Proposed Rule; however, we believe the Proposed Rule is deficient in several ways. As indicated in the enclosed comments, our major concerns include:

1. EPA has rushed to issue the Proposed Rule without considering extensive Information Collection request (ICR) test data that the COETF's members obtained and provided to EPA in 2022-2023. And, in rushing the process, EPA has not provided a reasonable time period for public comment as required by CAA section 307(h).
2. The COETF supports EPA's overall conclusion that residual risk associated with HAP emissions is very low and acceptable and that the existing Subpart CCCCC standards protect public health and the environment with an ample margin of safety. EPA's residual risk modeling indicates that the maximum cancer risk from Coke Ovens Pushing, Quenching, and Battery Stacks (PQBS) sources is 9-in-1-million. However, EPA should correct its modeling inputs and assumptions for byproduct recovery coke facilities as outlined in these comments, where the corrections would result in a maximum individual risk (MIR) of less than 2-in-1-million and a Hazard Index (HI) of 0.04 (for actual emissions) and MIR of less than 7-in-1-million and HI of 0.2 (for allowable emissions).
3. We strongly oppose EPA's proposed fenceline monitoring requirements because these requirements would unlawfully impose monitoring, root cause analysis, and corrective action work practice requirements on sources of benzene emissions at co-located byproduct recovery facilities, which are not listed as a source category under CAA section 112(c). In fact, byproduct recovery facilities were delisted by EPA in 2001; and EPA cannot simply regulate them again under this source category without going through the listing process specified in section 112. Nothing in section 112 confers on EPA the authority to regulate HAP emissions from unlisted sources or to impose any type of emission standard or work practice standard on unlisted sources. In addition, EPA's method for deriving the fenceline corrective action level arbitrarily treats all coke facilities as having perfectly circular boundaries (when none are in fact circular), resulting in an overly stringent action level that does not adequately account for offsite contributions and would apply to monitors located at the actual (rather than EPA's imaginary) facility boundary.

4. We also strongly oppose EPA's proposed reduced allowable leak limits for coke battery doors, lids, and offtakes because leak rates showing overcompliance with the existing MACT standards is not a "development in practices, processes, and control technologies" under CAA section 112(d)(6). EPA points to nothing more than lower leak rate data to back its unsubstantiated claim that there have been "identified improvements in control" of battery leaks. Indeed, the rulemaking record is completely devoid of any supporting information showing that lower leak rates are due to any developments in leak control practices, processes, or technology since the previous technology review was completed in 2005. In addition, EPA's proposal to set differing coke oven door leak limits based on total production capacity and to set identical limits for "tall" and "not tall" doors is unsupported and arbitrary and capricious.
5. The COETF agrees with EPA's finding that there are no identified developments in practices, processes, or control technologies for the PQBS source category. Based on this finding, EPA should not make revisions to the standards because (a) coke facilities are already using the most current practices and control technologies to minimize emissions from PQBS sources, and (b) revisions to the existing standards cannot be "necessary" in the absence of newly identified developments in technology. Therefore, EPA should not make any revisions to the existing opacity standards for coke battery combustion stacks or the standards for soaking emissions.
6. The proposed MACT standards for pushing capture and control devices and coke battery combustion stacks should not be finalized because the MACT floors are improperly based on a method using average emissions performance rather than average emission limitations. In addition, the MACT floor datasets are too limited and do not adequately reflect variability in operating conditions (e.g., normal coking time vs. extending coking time) or variability in raw material inputs, such as coal characteristics. Even though the COETF has worked cooperatively with EPA on this rulemaking over the last 8 years and our members provided test data in response to both rounds of ICRs, EPA did not provide a list of proposed HAPs or MACT floor limit calculations until August 4, 2023, only a few days before the Proposed Rule was published. As a result, the COETF's members were not able to conduct additional stack testing to submit during the comment period, as EPA denied our request for the necessary extension. If EPA proceeds with finalizing any MACT standards for pushing or combustion stacks – primarily based on 4 test results per proposed limit and without considering additional variability – future compliance testing will inevitably show results exceeding the proposed limits even by best performing facilities. This result would be arbitrary and capricious and contrary to law as EPA must set limits that are achievable per CAA 112(d), and some of the conceptual control technologies identified by EPA are not technically feasible and none are utilized at existing coke facilities in the U.S., nor demonstrated at coke facilities outside of the U.S.

Each of these topics and other concerns are addressed fully in the enclosed comments.

Comments of the COETF on Proposed Rule National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, and Coke Oven Batteries; Residual Risk and Technology Review, and Periodic Technology Review (Docket Nos. EPA-HQ-OAR-2002-0085, EPA-HQ-OAR-2003-0051)

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Thank you for your careful consideration of these comments. The COETF looks forward to working with EPA to address these comments as it finalizes the rulemaking. Please contact me at 703-795-3541 or dailor@acccl.org if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "David C. Ailor". The signature is fluid and cursive, with the first name "David" being the most prominent part.

David C. Ailor, P.E.
President

Enclosure

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**Comments on EPA's Proposed Rule National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, and Coke Oven Batteries; Residual Risk and Technology Review, and Periodic Technology Review
(Docket Nos. EPA-HQ-OAR-2002-0085, EPA-HQ-OAR-2003-0051)**

Coke Oven Environmental Task Force (COETF)
October 2, 2023

1. INTRODUCTION AND SUMMARY

These comments are submitted by the Coke Oven Environmental Task Force (COETF) on EPA's Proposed Rule National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, and Coke Oven Batteries; Residual Risk and Technology Review, and Periodic Technology Review, 88 Fed. Reg. 55858 (Aug. 16, 2023) (the "Proposed Rule").

The COETF was formed by the American Iron and Steel Institute (AISI) and the American Coke and Coal Chemicals Institute (ACCCI) in 1996 to address major environmental issues affecting the byproduct recovery coke industry collaboratively. The COETF represents all 4 companies that operate byproduct recovery coke facilities in the U.S. These companies operate a total of 6 coke facilities that produced nearly 7.3 million tons of metallurgical coke in 2022, which is a vital ingredient to making the steel that is the backbone of U.S. investments in infrastructure, electrification of the transportation sector, and our national defense.

All 4 COETF member companies will be directly regulated by the final Clean Air Act (CAA) National Emission Standards for Hazardous Air Pollutants (NESHAP) promulgated by EPA. Our members will also be impacted by the policy and legal decisions made by EPA in the final rule. Therefore, the COETF seeks to ensure that EPA uses reasonable and defensible risk assessment and technology review methodologies and data, and that any residual risk associated with hazardous air pollutant (HAP) emissions remaining after the application of maximum achievable control technology (MACT) is addressed accurately and appropriately, while avoiding burdensome changes to existing emission limitations when changes are not necessary to protect public health and are not based on new developments in technology.

By way of summary, these comments cover the following principal issues:

1. EPA has rushed to issue the Proposed Rule without considering extensive information collection request (ICR) test data that the COETF's members obtained and provided to EPA in 2022-2023. As a result, EPA has not provided a reasonable time period for public comment as required by CAA section 307(h).
2. The COETF supports EPA's overall conclusion that residual risk associated with HAP emissions is very low and acceptable and that the existing Subpart CCCCC standards protect public health and the environment with an ample margin of safety. EPA's residual risk modeling indicates that the maximum cancer risk from Coke Ovens Pushing, Quenching, and Battery Stacks (PQBS) sources is 9-in-1-million.¹ However, EPA should correct its modeling inputs and assumptions for byproduct recovery coke facilities as outlined in these comments, in which the corrections would result in a maximum individual risk (MIR) of less than 2-in-1-million and a Hazard Index (HI) of 0.04 (for actual emissions) and MIR of less than 7-in-1-million and HI of 0.2 (for allowable emissions).
3. We strongly oppose EPA's proposed fenceline monitoring requirements because these requirements would unlawfully impose monitoring, root cause analysis, and corrective action work practice requirements on sources of benzene emissions at co-located byproduct recovery facilities, which are not listed as a source category under CAA section 112(c). In fact, byproduct recovery facilities were delisted by EPA in 2001; and EPA cannot simply regulate them again under this source category without going through the listing process specified in section 112. Nothing in section 112 confers on EPA the authority to regulate HAP emissions from non-listed, non-categorical sources or to impose any type of emission standard or work practice standard on non-listed, non-categorical sources. In addition, EPA's method for deriving the fenceline corrective action level arbitrarily treats all coke facilities as having perfectly circular boundaries (when none are in fact circular), nor does it accurately consider all potential sources of benzene – many which are outside the control of the coke plant, resulting in an overly stringent action level that would apply to monitors located at the actual (rather than EPA's imaginary) facility boundary.

¹ 88 FR 55858, 55861 (Table 1) (Aug. 16, 2023).

4. We also strongly oppose EPA's proposed reduced allowable leak limits for coke battery doors, lids, and offtakes because leak rates showing overcompliance with the existing MACT standards is not a "development in practices, processes, and control technologies" under CAA section 112(d)(6). EPA points to nothing more than lower leak rate data to back its unsubstantiated claim that there have been "identified improvements in control" of battery leaks. Indeed, the rulemaking record is completely devoid of any supporting information showing that lower leak rates are due to any developments in leak control practices, processes, or technology since the previous technology review was completed in 2005.² In addition, EPA's proposal to set differing coke oven door leak limits based on total production capacity and to set identical limits for "tall" and "not tall" doors is unsupported and arbitrary and capricious.
5. The COETF agrees with EPA's finding that there are no identified developments in practices, processes, or control technologies for the PQBS source category.³ Based on this finding, EPA should not make revisions to the standards because (a) coke facilities are already using the most current practices and control technologies to minimize emissions from PQBS sources, and (b) revisions to the existing standards cannot be "necessary" in the absence of newly identified developments in technology. Therefore, EPA should not make any revisions to the existing opacity standards for coke battery combustion stacks or the standards for soaking emissions.
6. The proposed MACT standards for pushing capture and control devices and coke battery combustion stacks should not be finalized because the MACT floors are improperly based on a method using average emissions performance rather than average emission limitations. In addition, the MACT floor datasets are too limited and do not adequately reflect variability in operating conditions (e.g., normal coking time vs. extending coking time) or variability in raw material inputs, such as coal characteristics.

The COETF's comments on the Proposed Rule are discussed in detail below.

2. INADEQUATE PUBLIC COMMENT PERIOD

As a threshold matter, EPA has provided an inadequate and unreasonable public comment period on the Proposed Rule. In its rush to issue a final rule, EPA has only

² 70 FR 19992 (Apr. 15, 2005).

³ 88 FR at 55883.

provided a 45-day comment period, notwithstanding the fact that the Proposed Rule includes multiple proposed regulatory actions in a single rulemaking and is based on extensive risk modeling, fenceline modeling, and other data analysis and calculations that require more than 45 days for a reasonable public comment period.

CAA section 307(h) provides that “[i]t is the intent of Congress that, consistent with the policy of subchapter II of chapter 5 of title 5, the Administrator in promulgating any regulation under this chapter, including a regulation subject to a deadline, shall ensure a reasonable period for public participation of at least 30 days, except as otherwise expressly provided in [inapplicable sections].” (Emphasis added).

Section 307(h) makes clear that 30 days is the minimum reasonable time for a public comment period, even for the simplest of proposed rulemakings. The Proposed Rule is certainly not a simple proposed rulemaking – it contains a combination of multiple proposed actions within two separate regulations, extensive modeling and standards calculations, and numerous EPA requests for public comment on other topics.

In view of the above, the COETF requested⁴ a 30-day extension to the comment period to November 1, 2023 based on the following considerations:

- The lengthy (46-page) Proposed Rule involves several separate proposed actions on which EPA requests public comment, including (1) the residual risk review of the Pushing, Quenching and Battery Stack (PQBS) source category; (2) the first technology review of the PQBS source category; (3) a periodic review of the coke oven doors, lids, and offtakes source category; (4) a review of potential “gaps” after the decision in *Louisiana Environmental Action Network v. EPA* (LEAN);⁵ and (5) newly proposed fenceline monitoring and work practice standards. The Proposed Rule also requests public comment on additional issues, including whether the rule should include a new 1-hour opacity standard for combustion stacks and information on soaking emissions. Each of these proposed actions and requests for comment raises its own technical and legal issues and concerns for commenters. While EPA has some discretion to combine multiple regulatory actions into a single proposed rulemaking, in doing so, EPA must recognize that it is necessary to provide a longer public comment period than 45 days.

⁴ Letter from D. Ailor, ACCCI/COETF, to C. French, EPA OAQPS (Aug. 28, 2023) <https://www.regulations.gov/comment/EPA-HQ-OAR-2002-0085-0945>.

⁵ 955 F.3d 1088 (D.C. Cir. 2020).

- The Proposed Rule is supported by two separate rulemaking dockets that (as of August 28, 2023) contained over 2,300 documents, many of which are lengthy and complex compilations and analyses of emissions and modeling data that must be carefully reviewed for data accuracy and completeness. Although a limited number of data files were posted to EPA's public website a few days before the Proposed Rule was published, the vast majority of the supporting information and other materials were not available for public review until they were docketed the same day the Proposed Rule was published in the Federal Register.
- A large number of documents listed in the dockets as supporting materials are not available electronically from regulations.gov. EPA still needs to locate and upload many missing documents and provide additional time for public review and comment. CAA section 307(d)(3)(C) requires that "[a]ll data, information, and documents referred to in this paragraph on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule." However, a very significant number of documents were not made available (and still are not available) in the electronic docket. It is unreasonable for EPA to require the public to contact EPA directly to obtain missing documents and other information missing from the dockets within such a short 45-day timeframe.
- The Proposed Rule comes close on the heels of other regulatory actions impacting the same industry sectors and many of the same individual companies. EPA published the proposed National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing Facilities Technology Review (the "II&S proposed rule")⁶ just days before this Proposed Rule was published. As EPA is aware, the II&S proposed rule would impact the same industry sectors, and directly regulate some of the same companies. The comment periods overlapped substantially, creating an added burden on these companies, technical review staff, and technical consultants to review and prepare comments on 2 significant proposed rules at the same time.
- EPA also recently published the proposed rule for National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing Amendments,⁷ with a comment period that closed on July 7, 2023, only 3

⁶ 88 FR 49402 (Jul. 31, 2023).

⁷ 88 FR 30917 (May 15, 2023).

weeks before the II&S proposed rule comment period began. This onslaught of regulatory actions in such a short timeframe warranted a meaningful extension of time for the Proposed Rule comment period, so as to avoid undue prejudice to the COETF's members due to lack of availability of the required technical review staff and technical expertise needed to comment on multiple complex rulemakings simultaneously.

Notwithstanding these significant concerns, EPA did not provide additional time for public comment and did not offer an explanation for its decision.⁸

Although EPA is required to sign the PQBS RTR final rule by May 23, 2024,⁹ the court-ordered deadline is more than 7 months after the October 2, 2023 comment deadline. Seven months is sufficient time for EPA to provide a reasonable extension to the public comment period. Section 307(h) is clear that EPA must ensure a reasonable comment period, even for a rule subject to a deadline. The fact that EPA did not publish the Proposed Rule until August 16, 2023 – about 9 months before the court-ordered deadline – is not a legally sufficient basis for denying the COETF and other interested stakeholders a reasonable amount of time for public review and comment.

For the reasons detailed in the comments below, EPA must revisit a number of issues in the Proposed Rule – including the proposed fenceline monitoring requirements, proposed MACT floors, and other issues. If EPA intends to proceed with any of these aspects of the Proposed Rule, EPA should revise the Proposed Rule as discussed in the COETF's comments and publish a supplemental notice of proposed rulemaking with a complete statement of basis and purpose for the revised proposal and provide a new public comment period of not less than 30 days as required by sections 307(d)(3) and 307(h).

3. RESIDUAL RISK MODELING

In the Proposed Rule, EPA follows the general two-step approach required by section 112(f) and the Benzene NESHAP to determine whether residual risk after

⁸ Letter from P. Lassiter, EPA OAQPS, to D. Ailor, ACCCI/COETF (Sept. 19, 2023). It appears EPA has not placed a copy of the denial letter in the rulemaking docket as of the October 2 comment period deadline.

⁹ See *Citizens for Pennsylvania's Future v. Regan*, No. 3:19-cv-02004-VC (N.D. Cal. Nov. 22, 2022) (ECF 80).

implementing standards under section 112(d) are “acceptable” and if the existing standards protect public health with an “ample margin of safety.”¹⁰

The Proposed Rule includes a risk assessment conducted to assess public health and environmental risks for the PQBS source category based on actual and allowable HAP emissions, as well as whole facility risk for chronic and acute exposure. EPA’s risk modeling for the PQBS source category found a maximum lifetime individual cancer risk of at most 9-in-1-million based on actual emissions from a non-byproduct recovery facility, a chronic non-cancer HI of at most 0.1, and a maximum acute non-cancer hazard quotient (HQ) of at most 0.6.¹¹ EPA found whole facility maximum lifetime individual cancer risk of at most 50-in-1-million based on actual emissions, a chronic non-cancer HI of at most 2, and a maximum acute noncancer HQ of at most 0.6.¹²

Based on these risk modeling results and considering multipathway and other health risk factors, EPA appropriately proposes that the risks for the PQBS source category under the existing MACT standards are acceptable.¹³ The Proposed Rule also considers an ample margin of safety evaluation and other potential controls. Finding no potential controls that are feasible to implement as required by section 112(f), EPA concludes that the existing PQBS NESHAP also provides an ample margin of safety to protect public health.¹⁴

The COETF concurs with EPA’s conclusions that a 9-in-1-million maximum lifetime individual cancer risk value is very low – well below EPA’s acceptable value of 100-in-1-million – and that the risk remaining after the existing PQBS NESHAP is acceptable and protective of public health with an ample margin of safety. We note, however, that EPA’s modeling of byproduct recovery coke facilities includes some incorrect source characterizations, incorrect modeling assumptions, and unrepresentative data sets which are detailed in the comments that follow. When these issues are corrected, the updated risk modeling shows that, under all scenarios, the maximum lifetime individual cancer risk value and chronic non-cancer HI are lower compared to the already low and acceptable risk values derived by EPA.

¹⁰ 54 FR 38044 (Sept. 14, 1989). *See also*, *NRDC v. EPA*, 529 F.3d 1077, 1083 (D.C. Cir. 2008).

¹¹ 88 FR at 55880 (Table 8).

¹² *Id.*

¹³ *Id.* at 55882.

¹⁴ *Id.*

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The COETF conducted its own PQBS source category and whole facility modeling using the Human Exposure Model (HEM) 4.2 to incorporate the following revisions discussed in greater detail below:

- “Zeroing out” of 42003USS-Clairton-PA retired sources;
- Using the Allegheny County Health Department (ACHD) and EPA State Implementation Plan (SIP)-approved buoyancy flux (F') values for 42003USS-Clairton-PA;
- Modeling the 42003USS-Clairton-PA Facility using actual release parameters;
- Removing and relocating receptors as noted below;
- Using of Allegheny County Airport meteorological data for 42129AM-Monessen-PA; and
- Correcting the locations of the two natural gas water heaters at the 39155AM-Warren-OH facility.

Comparisons of EPA’s modeling to the COETF’s revised modeling results are summarized in Table 1 (PQBS Actual), Table 2 (PQBS Allowable), and Table 3 (Whole Facility) below.

After making the corrections outlined in these comments, the revised modeling results show significant reductions in whole facility maximum cancer risk and maximum chronic HI, and significant reductions in the total population exposed to greater than 1-in-1-million cancer risk for both the PQBS source category and whole facility emissions.

Copies of the COETF’s modeling files are provided as Attachments 1-15 to these comments.

Table 1. Comparison of EPA and COETF PQBS Source Category Modeling Results (Actual Emissions)

Facility Name (Per EPA Modeling Files)	Facility EIS ID	EPA Modeled Category Actual Emissions			COETF Modeled Category Actual Emissions		
		Cancer Risk (in a million)	Chronic HI	Population Exposed to > 1 in-a-million Cancer Risk	Cancer Risk (in a million)	Chronic HI	Population Exposed to > 1 in-a-million Cancer Risk
01073ABC-Tarrant-AL	1018711	0.8	0.01	0	0.8	0.01	0
18127AM-BurnsHarbor-IN	7376511	0.9	0.01	0	0.9	0.01	0
26163EES-RiverRouge-MI	16662611	0.07	0.001	0	0.07	0.001	0
42003USS-Clairton-PA	8204511	2	0.04	343	2	0.04	323
39155AM-Warren-OH	8115611	0.4	0.005	0	0.4	0.005	0
39017AKS-Middletown-OH	8008811	0.2	0.002	0	Permanently Closed in 2021		
42129AM-Monessen-PA	8330811	1	0.03	21	0.7	0.02	0
54009AKS-Follansbee-WV	4864311	0.6	0.01	0	Permanently Closed in 2022		
Max / Total		2	0.04	364	2	0.04	323

Table 2. Comparison of EPA and COETF PQBS Source Category Modeling Results (Allowable Emissions)

Facility Name (Per EPA Modeling Files)	Facility EIS ID	EPA Modeled Category Allowable Emissions			COETF Modeled Category Allowable Emissions		
		Cancer Risk (in a million)	Chronic HI	Population Exposed to > 1 in-a-million Cancer Risk	Cancer Risk (in a million)	Chronic HI	Population Exposed to > 1 in-a-million Cancer Risk
01073ABC-Tarrant-AL	1018711	4	0.05	68,720	4	0.05	68,720
18127AM-BurnsHarbor-IN	7376511	3	0.04	1,017	3	0.03	1,017
26163EES-RiverRouge-MI	16662611	0.5	0.006	0	0.5	0.01	0
42003USS-Clairton-PA	8204511	7	0.2	288,864	7	0.2	139,377
39155AM-Warren-OH	8115611	2	0.02	1,348	2	0.02	1,348
39017AKS-Middletown-OH	8008811	0.4	0.003	0	Permanently Closed in 2021		
42129AM-Monessen-PA	8330811	4	0.1	1,034	3	0.1	469
54009AKS-Follansbee-WV	4864311	3	0.05	3,012	Permanently Closed in 2022		
Max / Total		7	0.2	363,995	7	0.2	210,931

Table 3. Comparison of EPA and COETF Whole Facility Modeling Results

Facility Name (Per EPA Modeling Files)	Facility EIS ID	EPA Modeled Whole Facility Actual Emissions			COETF Modeled Whole Facility Actual Emissions		
		Cancer Risk (in a million)	Chronic HI	Population Exposed to > 1 in-a-million Cancer Risk	Cancer Risk (in a million)	Chronic HI	Population Exposed to > 1 in-a-million Cancer Risk
01073ABC-Tarrant-AL	1018711	20	0.4	649,170	20	0.4	649,170
18127AM-BurnsHarbor-IN	7376511	3	0.1	78,003	3	0.1	79,618
26163EES-RiverRouge-MI	16662611	0.6	0.02	0	0.6	0.02	0
42003USS-Clairton-PA	8204511	50	2	1,703,829	10	1	1,159,499
39155AM-Warren-OH	8115611	4	0.03	21,684	4	0.02	21,684
39017AKS-Middletown-OH	8008811	8	0.1	22,120	Permanently Closed in 2021		
42129AM-Monessen-PA	8330811	10	0.2	12,141	8	0.2	5,258
54009AKS-Follansbee-WV	4864311	20	0.2	60,441	Permanently Closed in 2022		
Max / Total		50	2	2,547,388	20	1	1,915,229

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Based on the foregoing, EPA should revise its risk modeling after making the changes detailed below.

1. Facilities and Sources that Are Permanently Closed Should Be Removed from EPA's Risk Modeling

EPA's risk modeling currently includes several facilities and sources that are no longer operating:

i) Batteries 1-3 at USS Clairton PA

In March 2023, the 42003USS-Clairton-PA facility permanently closed Batteries 1 through 3 and several other sources associated with these batteries. The modeled source IDs and descriptions that should be removed from EPA's risk modeling are summarized below:

Source ID	Description
CEBN0069	Coke Oven Battery 1 Underfiring
CEBN0070	Coke Oven Battery 2 Underfiring
CEBN0071	Coke Oven Battery 3 Underfiring
CEBP0084	PEC ¹⁵ Baghouse 1-3
CEFP0059	CB1-3 Fugitive Pushing
CEQT0078	Quench Tower No. 1 (serves Batteries 1, 2 and 3)
NEBC0003	C1-3_BC, Charging
NEDC0004	C1-3_DC, Doors-Coke-Side
NEDP0005	C1-3_DP, Doors-Push-Side
NELT0006	C1-3_LT, Lids-Topside
NEOT0007	C1-3_OT, Offtakes-Topside

Remodeling of 42003USS-Clairton-PA without these sources using EPA's model options results in a significant (80%) reduction – from 50-in-1-million to 10-in-1-million – in whole facility maximum cancer risk using actual emissions. The population exposed to a greater than 1-in-1-million cancer risk is also reduced significantly (32%) from 1.7 million persons to less than 1.2 million persons. See Table 3 above. Further, due to the inadequate comment period, the COETF did not have time to account for the additional reductions in boiler usage and reduced emissions from the byproduct recovery facility due to the shutdown of Batteries 1

¹⁵ Pushing Emission Controls (PEC).

through 3. Therefore, even the significantly reduced whole facility cancer risk still overstates potential risk.

ii) Cleveland-Cliffs (CC) (formerly AK Steel) Follansbee, WV and Middletown, OH Coke Facilities

The CC Follansbee WV (aka, Mountain State Carbon) coke facility permanently closed in Spring 2022. All coke operations at the CC Middletown OH facility were cold idled in October 2021 and now are permanently closed. Both of these facilities are no longer operational due to demolition activities and should not be included in EPA's baseline and post-control modeling scenarios.

Emissions reduction and risk benefits presented in EPA's Proposed Rule are overstated due to the improper inclusion of facilities and sources that are no longer operational.

2. EPA Should Use More-Representative Meteorological Data for Facility 42129AM-Monessen-PA

The COETF reviewed the meteorological data that EPA selected to model each facility. HEM4 defaults to using the closest meteorological station to the facility being modeled, regardless of whether or not the station is meteorologically representative of the facility being modeled.

The 42129AM-Monessen-PA facility is located approximately 9.8 miles south of the 42003USS-Clairton-PA facility and 13.4 miles south-southeast of the Allegheny County Airport meteorological station. The HEM4 meteorological database includes on-site meteorological data used to model 42003USS-Clairton-PA. Because this on-site station is located closer to 42129AM-Monessen-PA, EPA's modeling used the on-site meteorological data for 42003USS-Clairton-PA. However, the modeling for 42129AM-Monessen-PA should be revised to use the Allegheny County Airport meteorological station. This station's data are more representative of the valley orientation where 42129AM-Monessen-PA is located (east-west), compared to 42003USS-Clairton-PA which is oriented northwest to southeast.

Using data from this more representative meteorological station, the modeled whole facility cancer risk decreases from 10-in-1-million to 8-in-1-million; and the modeled population exposed to greater than 1-in-1-million cancer risk decreases from 12,141 to 5,258 persons. See Table 3 above.

3. Misplaced Emission Sources Should Be Corrected

We have reviewed the locations for all sources that EPA included in the whole facility modeling files and have determined that some sources are not in the correct locations. Specifically, at the 39155AM-Warren-OH facility, 2 natural gas water heaters (source IDs NEOR0001 and NEOR0002) are not in the correct locations and should be revised as summarized below.

Source ID	Latitude	Longitude
NEOR0001	41.205798	-80.816395
NEOR0002	41.205746	-80.816385

4. Misplaced Receptors Should Be Corrected

The COETF previously reviewed the receptor locations included in EPA's risk modeling and provided corrected receptor locations based on the 2010 census block data.¹⁶ These corrections were resubmitted to EPA in December 2020.¹⁷ We note that these revisions were not incorporated by EPA when HEM4 was updated to use the 2020 census block dataset. EPA should adjust or remove the following receptors as indicated below because the current receptor locations are not representative of sensitive receptor (residence) locations and using them overstates modeled risk:

- Census Block Receptor 420034970001007 (base elevation: 337.86 meters), which is located across the river from 42003USS-Clairton-PA, is not located in a residential area and is the MIR. This receptor should be relocated to the residential area (approximately 40.313916 N, 79.874883 W, base elevation: 232 meters) using the correct base elevation for the new location. This census block has rapid changes in elevation so using the incorrect receptor location significantly overstates modeled risk. Additionally, receptors 420034912001008, 420034994001004, 420034927002001, 420034912001013, 420034970001006, 420035645001002, 420035645002001, 420034994001024, and 420034927001002 should be

¹⁶ Email from D. Ailor, ACCCI/COETF, to D.L. Jones, EPA OAQPS, Providing Follow-up on Topics Discussed in 7/29/2020 Meeting (Aug. 24, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0543>.

¹⁷ Email from M. Kaplan, AECOM, to D.L. Jones, EPA OAQPS, Transmitting Revised Coke Model File Shell, Tab 19 (Dec. 24, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0580>.

relocated per Table 4 below. None of these receptors are currently located in residential areas.

- Census Block Receptor 010730109002001 should be removed. This receptor is located to the east of 01073ABC-Tarrant-AL, and is not located in a residential area. There are no residences within this census block.
- Census Block Receptors 181270504071011, 181270503021015, 181270503021050, 181270503021010, and 181270503021012 should be relocated as indicated in Table 4 below. All of these are located to the south and southeast of 18127AM-BurnsHarbor-IN and are not in residential areas. In addition, census block receptor 181270503021017 should be removed because there are no residences within this census block.
- Census Block Receptors 391559340005030, 391559340004027, 391559333011016, 391559333011015, and 391559333011018 near 39155AM-Warren-OH, should be relocated per Table 4 below. None of these receptors are currently located in residential areas.
- Census Block Receptor 421257747002003 is located on a hillside across the river from 42129AM-Monessen-PA. It is not located near a residential area and should be relocated to the residential area using the correct base elevation, as this census block has rapid changes in elevation. Receptors 421257747002007, 421257747003021, and 421257747003004, none of which are located in residential areas, should be relocated. Receptor 421257753002049 should be removed from the analysis because there are no residences in this block. Lastly, receptor 421298054001011 is not located in a residential area and is the MIR and should be relocated per Table 4 below. This change would further reduce the cancer risk from 10-in-1-million (using the correct meteorological data as noted earlier) to 8-in-1-million using the correct census block receptor locations.
- In the event EPA does not remove 39017AKS-Middletown-OH from the analysis (which it should), then (1) Census Block Receptor 390170141001005, located north of the facility, should be removed because it is not located in a residential area; and (2) Census Block Receptor 390170141001021, located on facility property, should be relocated off-property as indicated in Table 4 below.

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Table 4. Necessary Corrections to 2020 Census Block Receptor Locations

Facility ID	Census Block ID	Correct Census Block Receptor as Follows		
		Longitude (deg)	Latitude (deg)	Base Elevation (m)
01073ABC-Tarrant-AL	010730109002001	Remove		
18127AM-BurnsHarbor-IN	181270503021010	-87.112483	41.627684	189
18127AM-BurnsHarbor-IN	181270503021012	-87.109577	41.627686	208
18127AM-BurnsHarbor-IN	181270503021015	-87.092620	41.620539	192
18127AM-BurnsHarbor-IN	181270503021050	-87.127571	41.614597	194
18127AM-BurnsHarbor-IN	181270504071011	-87.170622	41.611167	182
18127AM-BurnsHarbor-IN	181270503021017	Remove		
39017AKS-Middletown-OH	390170141001005	Remove		
39017AKS-Middletown-OH	390170141001021	-84.387953	39.482460	203
39155AM-Warren-OH	391559340005030	-80.829665	41.206995	281
39155AM-Warren-OH	391559340004027	-80.795286	41.203515	275
39155AM-Warren-OH	391559333011016	-80.789463	41.193994	273
39155AM-Warren-OH	391559333011018	-80.807936	41.195420	270
39155AM-Warren-OH	391559333011015	-80.791568	41.202890	275
42003USS-Clairton-PA	420034970001007	-79.874883	40.313916	232
42003USS-Clairton-PA	42003497000100	-79.860025	40.296008	370
42003USS-Clairton-PA	420034994001004	-79.884445	40.316980	305
42003USS-Clairton-PA	420034994001024	-79.889387	40.316622	232
42003USS-Clairton-PA	420035645002001	-79.898590	40.278916	351
42003USS-Clairton-PA	420035645001002	-79.905210	40.291442	323
42003USS-Clairton-PA	420034912001008	-79.904312	40.308250	325
42003USS-Clairton-PA	420034912001013	-79.900738	40.318102	230
42003USS-Clairton-PA	420034927002001	-79.899756	40.318258	228
42003USS-Clairton-PA	420034927001002	-79.897251	40.315609	235
42129AM-Monessen-PA	421257747002003	-79.892838	40.168839	346
42129AM-Monessen-PA	421257747002007	-79.896192	40.169629	358
42129AM-Monessen-PA	421257747003021	-79.877731	40.178544	353

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Facility ID	Census Block ID	Correct Census Block Receptor as Follows		
		Longitude (deg)	Latitude (deg)	Base Elevation (m)
42129AM-Monessen-PA	421257747003004	-79.885597	40.186749	290
42129AM-Monessen-PA	421298054001011	-79.886145	40.162058	232
42129AM-Monessen-PA	421257753002049	Remove		

5. EPA's Modeling of Byproduct Recovery Coke Facilities Does Not Use Accurate Location and Height Data

EPA included byproduct recovery facilities as a non-category source in the whole facility modeling scenario presented in the risk analysis. The entire byproduct recovery facility was modeled as a single rectangular area source, which mischaracterizes actual emission source locations and significantly overstates modeled risk. At several coke facilities the byproduct recovery facility sources are not within the boundary of the area source assumed in EPA's risk analysis, as shown in the example for 26163EES-RiverRouge-MI in Figure 1 below. Light oil processing is included within EPA's modeled area source; however, tar liquid storage (TARLIQST) and loading (TARLOAD) are located in the eastern part of the facility, over 1 kilometer away from sensitive receptors.

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Figure 1. Byproduct Recovery Facility Source Locations (Facility ID 26163EES-RiverRouge-MI)



In November 2020, the COETF provided EPA with the release parameters for processes in the byproduct recovery area for each byproduct recovery coke facility.¹⁸ However, EPA did not use these parameters in the Proposed Rule, stating that “EPA will continue to use the '5-Noncategory-Chemical' tab developed with one row for each HAP for each byproduct chemical plant at each facility to correspond with how the emissions data were developed. If the modeling of the byproduct

¹⁸ Email from D. Ailor, ACCCI/COETF, to D.L. Jones, EPA OAQPS, COETF Review of Coke Model File Shell (Nov. 12, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0562>.

chemical plants results in high risk, EPA will remodel with the more detailed process units as suggested by COETF, assuming data is available for all facilities.”¹⁹

In response, in January 2021 the COETF submitted the average height of all byproduct recovery plant processes to EPA for incorporation into the risk modeling, as not all processes occur at ground level.²⁰ EPA’s risk modeling results for 42003USS-Clairton-PA show a whole facility maximum chronic non-cancer risk of 1.68 (rounded to 2) attributed to emissions of hydrogen cyanide (HCN) from the byproduct recovery facility because EPA failed to use accurate source location and height data. However, modeling using the correct source parameters that the COETF provided to EPA results in a whole facility maximum chronic non-cancer risk of 1.14, which rounds to 1 and is acceptable risk.

EPA should revise the risk modeling making these changes in order to provide accurate risk modeling information for public review and comment.

6. EPA Should Use More-Accurate Buoyancy Flux (F') Values for Facility 42003USS-Clairton-PA

The COETF reviewed the buoyancy parameter calculations included in EPA’s risk modeling (summarized in Docket EPA-HQ-OAR-2003-0051-0668, Attachment 30). For 42003USS-Clairton-PA, EPA included a footnote stating that the F’ values in the document were used in the ACHD SIP modeling study,²¹ results of which are shown in Table 5 below.

¹⁹ Email from D.L. Jones, EPA OAQPS, to D. Ailor, ACCCI/COETF, EPA Responses to COETF Review of Coke Model File Shell (Nov. 20, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0567>.

²⁰ Email from M. Kaplan, AECOM, on behalf of the COETF, to D.L. Jones, EPA OAQPS, Updated Coke Model File Shell (Jan. 22, 2021) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0589>.

²¹ ACHD, Alternative Modeling Technical Support Document BLP/AERMOD Hybrid Approach for Buoyant Fugitives in Complex Terrain (Jul. 27, 2018) https://gaftp.epa.gov/Air/aqmg/SCRAM/mchisrs/ACHD_Alternative_Demo_Buoyant_Fugitives_Final.pdf.

Comments of the COETF on Proposed Rule National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, and Coke Oven Batteries; Residual Risk and Technology Review, and Periodic Technology Review (Docket Nos. EPA-HQ-OAR-2002-0085, EPA-HQ-OAR-2003-0051)

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Table 5. Screen Capture from ACHD Buoyancy Parameter Calculations

Facility ID	Width	Length	Height	Battery	Side	Side	Ambient	Battery	Side Surf.	Battery Top	Battery Side	Top + Side	Potential	Potential	Push	F'	F'	F'	Total F'
(Batteries)	(m)	(m)	(m)	Velocity	Velocity	Width (m)	Temp	Temp	Temp	F'	F'	F'	Tons Coke/yr	Tons Coal/yr	Capture	Push	Hot Car	Soaking	with
				(m/s)	(m/s)	(battery top)	(K)	(K)	(K)	(m4/s3)	(m4/s3)	(m4/s3)							Emissions
42003USS-Clairton-PA⁽¹⁾																			
Batteries 1-3	13.70	287.00	8.50	0.96	1.52	0.67	284.27	299.07	394.1	1832.45	1595.63	3428.08	1,205,595	1,687,833	0.9903	5.41E-01	5.07E+01	8.73E+00	3,488.0
Batteries 13-15	14.00	273.00	8.80	0.96	1.52	0.69	284.27	299.07	394.1	1781.23	1571.37	3352.59	1,270,200	1,778,280	0.9931	4.05E-01	5.34E+01	9.20E+00	3,415.6
Batteries 19-20	14.00	247.00	10.50	0.96	1.52	0.83	284.27	299.07	394.1	1611.59	1696.36	3307.95	1,555,630	2,177,882	0.9968	2.30E-01	6.54E+01	1.13E+01	3,384.8
Battery B	16.70	106.00	15.10	0.96	1.52	1.19	284.27	299.07	394.1	825.00	1046.92	1871.92	1,157,050	1,619,870	0.9996	2.14E-02	4.86E+01	8.38E+00	1,929.0
Battery C	16.70	115.00	15.10	0.96	1.52	1.19	284.27	299.07	394.1	895.04	1135.81	2030.85	1,107,384	1,550,338	0.9998	1.02E-02	4.66E+01	8.02E+00	2,085.4
Note:																			
(1) Total F' values for USS Clairton based on estimates developed by the Allegheny County Health Department in support of a State Implementation Plan modeling study																			
(Allegheny County Health Department Air Quality Program, Alternative Modeling Technical Support Document: BLP/AERMOD Hybrid Approach for Buoyant Fugitives in Complex Terrain (Jul. 27, 2018).																			

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However, ACHD used different facility-specific F' values for the SIP modeling study compared to those used in EPA's risk modeling, as shown in Table 6 below. ACHD used the higher F' values in lieu of modeling 42003USS-Clairton-PA with urban dispersion characteristics. ACHD conducted a model-to-monitor comparison as part of an alternative model demonstration that was approved by EPA. As Section 2.2 of ACHD's Technical Support Document explains, "ACHD presumes that the heat island effect is better characterized at the surface level, adding buoyancy to sources rather than modifying the boundary layers. Accounting for thermal buoyancy in this manner is likely the best approach for sources with localized industrial heat flux."²²

Table 6. ACHD Technical Support Document (Table 3-1)

Table 3-1. BUOYLINE/BLP Line Parameters

Buoyant Line Source	ID	Elev (m)	UTMx (m) nw	UTMy (m) nw	UTMx (m) se	UTMy (m) se
US STEEL CLAIRTON Batteries 1-3	CLBATT1_3	231	595732.52	4461976.88	595922.90	4461762.85
US STEEL CLAIRTON Batteries 13-15	CLBATT13_15	231	595271.42	4462323.03	595452.96	4462119.60
US STEEL CLAIRTON Batteries 19-20	CLBATT19_20	231	595229.60	4462254.53	595393.87	4462069.79
US STEEL CLAIRTON B Battery	CLBATTB	231	595515.79	4462338.59	595585.53	4462260.73
US STEEL CLAIRTON C Battery	CLBATT C	231	595663.04	4462173.24	595739.93	4462086.93
Buoyant Line Source (cont.)	ID	Avg Bldg (Line) Length (m)	Avg Bldg Ht (m)	Avg Bldg Width (m)	Avg Line Width (m)	Spacing (m)
US STEEL CLAIRTON Batteries 1-3	CLBATT1_3	287.0	8.5	13.7	1.0	0.0
US STEEL CLAIRTON Batteries 13-15	CLBATT13_15	273.0	8.8	14.0	1.0	0.0
US STEEL CLAIRTON Batteries 19-20	CLBATT19_20	247.0	10.5	14.0	1.0	0.0
US STEEL CLAIRTON B Battery	CLBATTB	106.0	15.1	16.7	1.0	0.0
US STEEL CLAIRTON C Battery	CLBATT C	115.0	15.1	16.7	1.0	0.0
Buoyant Line Source (cont.)	ID	Exit Temp (K)	Amb Temp (K)	Exit Vel (m/s)	Avg Line Buoyancy (m ⁴ /s ²)	BUOYLINE Release Ht (m)
US STEEL CLAIRTON Batteries 1-3	CLBATT1_3	1184.83	284.27	3.05	6520.3	8.5
US STEEL CLAIRTON Batteries 13-15	CLBATT13_15	1184.83	284.27	3.05	6202.2	8.8
US STEEL CLAIRTON Batteries 19-20	CLBATT19_20	1184.83	284.27	3.05	5611.5	10.5
US STEEL CLAIRTON B Battery	CLBATTB	1184.83	284.27	3.05	2408.2	15.1
US STEEL CLAIRTON C Battery	CLBATT C	1184.83	284.27	3.05	2612.6	15.1

²² ACHD, PM_{2.5} SIP Appendix H Alternative Modeling Demonstration for Buoyant Fugitives, Alternative Modeling Technical Support Document BLP/AERMOD Hybrid Approach for Buoyant Fugitives in Complex Terrain (Jul. 27, 2018)

https://www.alleghenycounty.us/uploadedFiles/Allegheny_Home/Health_Department/Programs/Air_Quality/SIPs/90-SIP-App-H.pdf.

In December 2020, EPA requested COETF input on preparing a mass balance heat analysis for coke batteries to demonstrate that the heat available to these batteries adequately accounts for their heat releases to the atmosphere. The COETF's comprehensive, battery-specific analysis of heat sources to these batteries shows that the total available heat adequately accounts for the estimated battery heat releases to the atmosphere, as predicted by the ACHD F' values. On March 26, 2021, the COETF submitted supporting documentation to EPA in a memorandum entitled "Additional Clarification and Detail Regarding Coke Oven Battery Plume Heights for Risk and Technology Review Modeling."²³ EPA should revise its modeling to use the ACHD- and EPA SIP-approved F' values for the reasons set forth in the ACHD Technical Support Document and in the COETF's mass balance heat analysis and analysis of coke battery plume heights.

7. The COETF Supports EPA's Proposed Findings from Its Multipathway Risk Assessment

EPA conducted a multipathway risk assessment to determine the effects of persistent and bioaccumulative HAPs on nearby farms, gardens, and fishable water bodies, as these are additional potential exposure pathways affecting human health.

The COETF supports EPA's proposed findings for the multipathway screening assessment and the use of past site-specific Total Risk Integrated Methodology (TRIM) risk assessments and their associated Tier 2 and Tier 3 Screening Values (SVs).

EPA determined that the chronic HQ for mercury (Hg) is less than 1 and the maximum cancer risk from arsenic is at most 5-in-1-million. Concentrations of lead, the highest of which was 0.013 $\mu\text{g}/\text{m}^3$, were well below the National Ambient Air Quality Standard of 0.15 mg/m^3 . The screening level evaluation of the environmental risk determined that emissions from the source category do not exceed risk-based benchmarks.

²³ Email from D. Ailor, ACCCI/COETF, to D.L. Jones, EPA OAQPS, Additional Clarification and Detail Regarding Coke Oven Battery Plume Heights for Risk and Technology Review Modeling (Mar. 26, 2021) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0605>. See also, <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0545>, <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0556>, and <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0570>.

8. EPA's Proposed Actual-to-Acute Multiplier of 2 Is Appropriate

For the PQBS and Coke Oven Battery source categories, EPA applied a factor of 2 to actual emissions to estimate short-term emissions (e.g., lb/hr) for use in the acute risk assessment. Yet, as EPA notes in the preamble to the Proposed Rule, coke plants have relatively consistent operations that typically do not vary much from hour-to-hour:

Coke oven charging, pushing, and quenching operations maintain largely consistent hour-to-hour pushing rates because plants are constrained by oven capacity, coking temperatures, coking times, and plant design/equipment. Coke plants may have small deviations in short-term emission rates from annual average emission rates.²⁴

As the COETF originally communicated to EPA by correspondence in August 2020,²⁵ an analysis of hourly pushing records at 5 coke oven facilities showed that the hourly pushing rate does not deviate significantly from the annual average pushing rate, with multipliers ranging from 1.26 to 2.06. Therefore, an acute multiplier of 2 is a reasonable yet health protective value to use for estimating short-term emissions. The COETF supports EPA's use of this value.

9. The COETF Supports EPA's Use of Different Emission Factors for Byproduct Recovery Coke Facilities Versus Heat/Nonrecovery Facilities and Requests that the Same BDL Adjustment Factor be Applied to DLL Data

As EPA notes in its Data Summary, there are significant differences between byproduct recovery coke facilities and heat/nonrecovery (HNR) facilities:

ByP ovens are operated at positive pressure, whereas HNR ovens operate under negative pressure. The organic gases and vapors that evolve from the ovens are removed through an exhaust system: for by-product (ByP) plants, gases are sent to a chemical recovery plant that recovers chemicals and other byproducts for sale and also cleans the coke oven gas (and is regulated under 40 CFR part 61, subpart L NESHAP); for nonrecovery plants (i.e., no chemical recovery) with heat recovery, the oven gases are sent to a heat recovery steam generator that produces power for sale and also to units that perform gas cleaning; for

²⁴ 88 FR at 55870.

²⁵ Email from A.C. Dittenhoefer, Montrose, on behalf of the COETF to D.L. Jones, EPA OAQPS (Aug. 31, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0544>.

nonrecovery plants without heat recovery, oven exhaust gases are released to the air through waste heat stacks.²⁶

In developing emissions estimates in support of the Proposed Rule, EPA developed certain separate emission factors for byproduct recovery coke facilities and HNR facilities using data supplied by the industry. As shown in Table 14 of EPA's Data Summary,²⁷ various facilities were required to conduct stack tests in response to EPA's ICR. For HNR facilities, separate emission factors were developed for pushing, charging, main, and bypass/waste heat stacks. The COETF agrees with this approach because the technology and source profiles for byproduct recovery and HNR facilities are different, so emissions are also expected to be different.²⁸

Source testing methods for the quantification of compounds can result in a number of test fractions and containers that are isolated for analytical purposes (e.g., front half, back half, etc.) and the results for each separately analyzed fraction are summed to produce the total test result. If an analytical fraction is measured below detection limit (BDL), EPA substituted the method detection limit (MDL) for the result. If all fractions of a test run are below the detection limit, then EPA classified the entire run BDL. Conversely, if all fractions of a test run are above the detection limit, then EPA classified the entire run as above detection limit (ADL). However, if some fractions are classified as above the detection limit and some below, then EPA classified the entire run as detection limit limited (DLL).

For purposes of developing emission estimates for the risk assessment in support of the Proposed Rule and as further described in EPA's Data Summary,²⁹ EPA applied an "adjustment factor" for data classified as BDL. Specifically, EPA substituted one-half of the MDL or one-half of the estimated detection limit (EDL) for BDL results. The COETF supports this adjustment, which is consistent with previous comments we have submitted to EPA on this topic.³⁰

²⁶ EPA, Coke Ovens Risk and Technology Review: Data Summary (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0809>.

²⁷ *Id.*

²⁸ D.L. Jones, EPA OAQPS, to K. Batten, SunCoke Energy (Jun. 24, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0531>.

²⁹ EPA, Coke Ovens Risk and Technology Review: Data Summary (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0809>.

³⁰ Email from A.C. Dittenhoefer, Montrose, on behalf of the COETF to D.L. Jones, EPA OAQPS, COETF Comments on Whole Industry Coke Section 114 ICR Data and Calculations (Oct. 14, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0550>.

While EPA has appropriately substituted one-half of the MDL or EDL for BDL results, EPA did not make a similar adjustment for data classified as DLL. According to EPA's Data Summary,³¹ "[n]ote that for test runs classified as 'DLL' or 'ADL', there were no adjustments made to the test run values" ³²

The COETF supports EPA's adjustment factor for emission rates for run flag designations of BDL. However, we request that EPA use the same adjustment factor for DLL data used in risk assessments as well (i.e., for fractions that are BDL, substitute one-half of the MDL or EDL for the result).

10. Community Impact Assessments

EPA conducted a demographic analysis to determine if residents in certain demographic groups are disproportionately impacted by coke oven facilities. Based on EPA's risk analysis for the source category, only 2 coke facilities have a modeled cancer risk greater than or equal to 1-in-1-million. EPA determined that under the baseline modeling scenario, 2,400 people within a 50 km radius would be exposed to a cancer risk greater than or equal to 1-in-1-million. Under a post-control scenario, the number was reduced to 400 people, which number is overstated for the reasons outlined below.

The demographics for these 2 coke facilities show that the percentage of the population that is African American, within a 10 km radius, and that would be exposed to a cancer risk greater than or equal to 1-in-1-million is very similar to the nationwide average, and the percentage for People of Color is significantly lower than the national average. Additional information on the demographics analysis are summarized in Table 7 below.

³¹ EPA, Coke Ovens Risk and Technology Review: Data Summary (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0809>.

³² *Id.*

Table 7: Demographic Assessment of Risk Results for Populations within a 10 km Radius with Modeled Risk Greater Than or Equal to 1-in-1-Million

Population Basis	African American	People of Color	Below the Poverty Level
Nationwide	12.1%	40.5%	12.8%
State	10.6%	24.3%	11.6%
County	9.2%	16.8%	10.8%
42003USS-Clairton-PA	12.0%	18.7%	12.6%
42129AM-Monessen-PA	13.3%	22.0%	17.3%

As shown in Table 1 of these comments, under the revised risk analysis, the population exposed to cancer risk greater than or equal to 1-in-1-million decreases to 323 people located in just 2 census blocks (for both the pre- and post-control scenarios). However, when receptors are relocated to where residences are actually located within the 2 census blocks, only a small subset of the population within these census blocks are exposed to greater than or equal to 1-in-1-million cancer risk; and the total is likely to be far fewer than 323.

4. PROPOSED FENCELINE MONITORING REQUIREMENTS

1. EPA's Proposed Fenceline Monitoring Requirements Are Unlawful and Should Be Withdrawn

EPA's proposed fenceline monitoring requirements present a host of problematic legal and technical concerns, which are addressed below. A significant threshold legal concern is that the proposed requirements, including work practice requirements, would be imposed on emissions from the byproduct recovery facilities – that is, under the Proposed Rule, coke facilities would be required to monitor for benzene emissions originating partly or wholly from non-category sources that are not subject to section 112 of the Clean Air Act and to take corrective action to lower emissions originating from non-category sources if there is an exceedance of the proposed action level.

For the reasons discussed below, EPA has no authority to impose section 112 work practices or other requirements on emissions from sources that are not in a source category listed under section 112(c). Therefore, all proposed fenceline monitoring requirements should be withdrawn and should not be included in the final rule.

Although the Proposed Rule states that the fenceline monitoring work practice requirements are being proposed under the 112(c)(6) technology review for the Coke Ovens source category, EPA acknowledges that these requirements, if finalized, would apply to sources inside byproduct recovery facilities. EPA proposes that benzene be monitored “at the fenceline of each coke oven facility,”³³ which includes the co-located byproduct recovery facility. EPA also states that the proposed action level is based on facility-wide emissions, which includes byproduct recovery facility emissions and other non-category sources:

In this proposal, we are proposing to allow the subtraction of offsite interfering sources (because they are not within the control of the owner or operators of coke ovens facilities) through site-specific monitoring plans, but we are not providing this option for onsite, non-source category emissions. The action levels described in this section are based on facility-wide emissions, and therefore these nonsource category sources have been considered in their development.³⁴

Indeed, EPA’s approach primarily targets benzene emissions from the non-source category byproduct recovery facility and not benzene in coke oven emissions (COE) from the source category coke batteries. EPA states that “the primary releases of benzene occur at ground level as fugitive emissions and the highest ambient benzene concentrations outside the facility would likely occur near the property boundary, also near ground level, so fugitive releases of benzene would be effectively detected at the ground-level monitoring sites.”³⁵ While fugitive emissions of benzene from sources in byproduct recovery facilities are generally located at or near ground level, benzene emissions from coke oven batteries are dispersed with median plume heights of 90 to 200 meters above ground level due to the heat flux and vertical momentum rise (buoyancy) of the plumes.³⁶

Benzene in COE is not primarily released at ground level, nor is it accurate to state that the highest concentrations of benzene from COE are likely to occur at ground level near the facility property boundary. This clearly demonstrates that EPA is

³³ 88 FR at 55885.

³⁴ *Id.* at 55887.

³⁵ *Id.* at 55886.

³⁶ Email from D. Ailor, ACCCI/COETF, to D.L. Jones, EPA OAQPS, Additional Clarification and Detail Regarding Coke Oven Battery Plume Heights for Risk and Technology Review Modeling (Mar. 26, 2021) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0605>.

clearly targeting the non-category byproduct recovery facility with the fence-line monitoring program.

The plain text and overall structure of section 112 are clear that EPA has legal authority to establish requirements under sections 112(d)(1), (d)(6), or (f)(2), but only for source categories listed under section 112(c). Section 112 provides no authority to impose any requirements (whether based on MACT, technology review, or risk review) on non-source category sources. The fact that standards may only be imposed on emissions from listed source categories is carried through multiple subsections of section 112:

- Section 112(c)(2) provides: “For the categories and subcategories the Administrator lists, the Administrator shall establish emissions standards under subsection (d), according to the schedule in this subsection and subsection (e).”
- Section 112(d)(1) provides: “The Administrator shall promulgate regulations establishing emission standards for each category or subcategory of major sources and area sources of hazardous air pollutants listed for regulation pursuant to subsection (c) in accordance with the schedules provided in subsections (c) and (e).”
- Section 112(d)(6) 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.”
- Section 112(f)(2)(A) provides: “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.”
- Section 112(f)(2)(C) provides: “The Administrator shall determine whether or not to promulgate such standards and, if the Administrator decides to promulgate such standards, shall promulgate the standards 8 years after

promulgation of the standards under subsection (d) for each source category or subcategory concerned. In the case of categories or subcategories for which standards under subsection (d) are required to be promulgated within 2 years after November 15, 1990, the Administrator shall have 9 years after promulgation of the standards under subsection (d) to make the determination under the preceding sentence and, if required, to promulgate the standards under this paragraph."

(Emphasis added).

Thus, section 112 limits EPA's authority to set standards under section 112(d) only for the prescribed set of source categories listed under 112(c); limits EPA's authority to conduct periodic reviews only to those source categories with standards promulgated under section 112(d); and limits EPA's authority to perform risk-based reviews only for those same listed source categories.

Byproduct recovery facilities are not even a listed source category under section 112(c). In 1992, EPA initially listed byproduct recovery facilities under section 112(c).³⁷ The listing decision was based on the fact that coke oven facilities as a whole, including coke batteries and byproduct recovery facilities, were major sources of HAP emissions.

However, byproduct recovery facilities were at that time (and remain) subject to emission control standards under the National Emission Standards for Benzene Emissions from Coke Byproduct Recovery Plants, 40 CFR Part 61, Subpart L, initially promulgated in 1980 and revised in 1991. Subpart L limits HAP emissions through equipment leak detection and repair (LDAR) work practice standards. Byproduct recovery facilities are required to enclose and seal all openings on process vessels, tar storage tanks, and tar intercepting sumps and to duct collected gases from these sources to a gas collection system for treatment. Because these LDAR requirements control all gases passing through this equipment, Subpart L controls benzene and all other HAP emissions from the byproduct recovery facility.

Based upon these Part 61, Subpart L requirements, in 2001 EPA published a notice delisting byproduct recovery facilities as a source category under CAA section 112(c).³⁸ The delisting decision was based on an EPA study that "... examine[d] the effectiveness of the existing NESHAP for coke by-product recovery plants and concluded that further regulation of this source category is unnecessary. Although

³⁷ 57 FR 31576 (Jul. 16, 1992).

³⁸ 66 FR 8220 (Jan. 30, 2001).

the existing [Subpart L] standard was developed to control benzene, the standard effectively controls all other emitted HAP.”³⁹

Therefore, EPA concluded that delisting byproduct recovery facilities from the list of section 112 source categories was appropriate because:

- “The benzene standard, applicable to all coke by-product recovery plants in the listed source category, would determine the floor for any section 112(d) standard;”
- EPA “know[s] of no realistic ‘beyond the floor’ options at this time;” and
- “[F]urther rulemaking would result in no accompanying benefits. Any new standard that we would develop under section 112(d) would be based on and be comparable to the existing standard both in terms of application and level of stringency.”⁴⁰

EPA also cannot defend its proposed fenceline monitoring requirements using its section 112(d)(6) technology review authority. As noted above, section 112(d)(6) requires EPA to review “emission standards promulgated under this section” (i.e., promulgated under section 112(d)). It does not provide authority for EPA to perform a technology review for a source category that does not have emission standards promulgated under section 112(d).

EPA must also reconsider its claim of authority to impose the proposed fenceline monitoring requirements in light of the Supreme Court’s decision in *West Virginia v. EPA*, 142 S. Ct. 2587 (2022). Here, EPA claims extraordinarily broad authority to regulate emissions coming from sources that are not subject to section 112 requirements based solely on EPA’s concern about “the potential magnitude of emissions from fugitive sources and the difficulty in monitoring actual fugitive emission levels.”⁴¹ Using this new-found authority, EPA could expand fenceline monitoring to include emissions from any possible source – stationary or mobile, major or minor – in effect creating a wholly new ambient air pollution monitoring and emissions control regime. In *West Virginia*, the Supreme Court addressed situations like this, where EPA claims extraordinary authority based on nothing more than merely plausible readings of vague or general statutory text. In order to protect both separation of powers principles and legislative intent, the *West Virginia* decision

³⁹ *Id.* at 8222.

⁴⁰ *Id.*

⁴¹ 88 FR at 55885.

requires EPA to “point to ‘clear congressional authorization’ for the power it claims.”⁴² EPA has not and cannot do that here. The shaky foundation EPA offers – based only on section 112(d)(6) technology review authority – does not confer the broad authority EPA claims to impose fenceline monitoring and control requirements on emissions from other sources.

Perhaps aware of these legal defects, EPA says it “intend[s] to list CBRP operations (as we are calling the co-located plants at coke ByP facilities) that currently are addressed under the Benzene NESHAP in 40 CFR part 61, as a source category under CAA section 112(c)(5).”⁴³ But EPA has not published any such re-listing notice, which is a statutory prerequisite in order to establish any standards that would apply to a source category.⁴⁴ Furthermore, EPA admits that it lacks the most basic information that would be necessary to finalize a relisting decision.

For example, in the preamble EPA asks commenters to provide information on individual HAPs emitted from byproduct recovery facilities, to identify the process units that emit HAPs, and to provide estimates of HAP emissions.⁴⁵ EPA states “[o]nce we have this information, we will be in a better position to finalize the decision to list and to identify the appropriate scope of the source category to be listed.”⁴⁶ Indeed, byproduct recovery facilities are complex facilities that encompass a wide range of operations and process equipment. Identifying and estimating emissions is complicated by the fact that most HAP are emitted as fugitive emissions. This is a reason why Part 61, Subpart L limits HAP emissions through LDAR work practice standards.

In order for EPA to list byproduct recovery facilities as a new source category, the Agency must first re-evaluate its earlier delisting decision and provide a rational basis for reversing this longstanding regulatory determination; and explain why regulating byproduct recovery facilities under multiple sets of standards would be authorized and technically sound. EPA has not identified, nor are we aware of, any new information showing that EPA’s earlier delisting decision is no longer correct or

⁴² 142 S. Ct. at 2609.

⁴³ 88 FR at 55866. Further, the Proposed Rule does not reference the 2001 delisting notice or acknowledge in any way that byproduct recovery plants were previously deleted from the list of source categories.

⁴⁴ Even if EPA were to list byproduct recovery facilities under section 112(c), EPA still would not have authority to impose monitoring and control requirements on coke batteries based on benzene emissions from byproduct recovery facilities.

⁴⁵ 88 FR at 55866.

⁴⁶ *Id.*

that it would be appropriate for EPA to add byproduct recovery facilities to the section 112(c) list of source categories.

In sum, EPA's proposal to impose fenceline monitoring requirements on the entire coke facility using facility-wide emissions, including emissions from onsite non-source category sources, is legally flawed and should be withdrawn. To the extent EPA finalizes any fenceline monitoring requirements, those requirements must be narrowly drawn to apply only to the Coke Ovens source category and sampling monitors located so as to monitor emissions only from coke oven batteries and no other sources. Further, owners/operators must be allowed to subtract out emissions from both offsite sources and onsite non-source category sources. As stated earlier, such an exercise would be complicated by the fact that benzene in COE from coke oven batteries is entrained by the hot, buoyant vertical plume rise. EPA would also need to consider the feasibility of designing and implementing such a program, given the close proximity and size of the co-located byproduct recovery facilities and nearby offsite sources of benzene emissions. At USS Clairton PA, for example, the byproduct recovery facility is located in between the coke batteries, so isolating the impacts from the category-specific sources would be difficult, perhaps impossible.

2. EPA's Estimates of Fenceline Benzene Concentrations Are Invalid and Should Not Be Used to Set an Action Level

As EPA notes in its Data Summary,⁴⁷ the HAP emissions from the 2016 and 2022 ICR and 1998 uncontrolled stack test data for the fugitive pushing HAP profile^{48,49} were used to develop the Coke Oven Emissions Database "actual" annual HAP emissions estimates for all HAP-emitting coke PQBS units at coke facilities (e.g., pushing, battery combustion stacks, quench towers).

For non-category sources, EPA did not have information nearly as complete as it did for PQBS category-specific sources; instead, it relied heavily on EPA's 2017 National Emission Inventory (NEI) / Emission Inventory System (EIS) data. The non-category operating units with potential for HAP emissions at coke facilities may

⁴⁷ EPA, Coke Ovens Risk and Technology Review: Data Summary (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0809>.

⁴⁸ EPA, Final Report (Volumes I-III) Emissions Testing of Combustion Stack and Pushing Operations at Coke Battery No. 2 at Bethlehem Steel Corporation's Burns Harbor Division in Chesterton, Indiana (Feb. 1999) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0164>.

⁴⁹ EPA, Final Report (Volumes I-III) Emissions Testing of Combustion Stack and Pushing Operations at Coke Battery No. 5/6 at ABC Coke in Birmingham, Alabama (Feb. 1999) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0165>.

include, but are not limited to: Coke Ovens, Subpart L, sources: charging (both byproduct recovery and HNR); doors, lids, and offtakes; byproduct recovery facilities; boilers; flares; Integrated Iron and Steel (Part 63, Subpart FFFFF) sources, i.e., blast furnace (BF), BF stoves, basic oxygen process furnace (BOPF) control devices, ladle metallurgy, hot metal transfer skimming and desulfurization, sinter plant windbox; and other miscellaneous units not related to coke manufacturing (e.g., process heaters, metal finishing, steel pickling, annealing furnaces, and reheat furnaces, etc.).

EPA has not conducted an adequate level of review for emissions or modeling parameters from non-category sources in order to establish a fenceline action level. Consequently, the modeled impacts of non-category sources are associated with much greater uncertainty. In the preamble to the Proposed Rule, EPA acknowledges this uncertainty in the context of the risk estimates:

Although we are interested in placing source category and facility-wide HAP risk in the context of total HAP risk from all sources combined in the vicinity of each source, we note there are uncertainties of doing so. Estimates of total HAP risk from emission sources other than those that we have studied in depth during this RTR review would have significantly greater associated uncertainties than the source category or facility-wide estimates.⁵⁰

The benzene action level was established using an emissions and modeling approach similar to that used for the risk assessment and is, therefore, fraught with the same unacceptable degree of uncertainty.

In developing the proposed fenceline action level for benzene, EPA performed facility-wide modeling of benzene emissions. However, this modeling was conducted using actual emissions for byproduct recovery facilities, rather than allowable emissions, which understates the expected fenceline results that inform an action level. An action level established based on actual emissions is not appropriate or justified and would not properly account for expected emission rates that would occur (for example) when production is near capacity. Because benzene emissions associated with non-category sources have greater uncertainty, and EPA's method used actual emissions rather than allowable emissions, the proposed action level is not defensible and is not a reliable means of determining whether a source is out of compliance and needs to take corrective action. Emissions fluctuate frequently over time, and the action level that EPA has proposed using actual

⁵⁰ 88 FR at 55867.

emissions for byproduct recovery sources does not take these fluctuations into account. That is why monitored benzene concentrations at a facility's fenceline are likely to exceed the proposed action level even though source category allowable emissions were included in the analysis to set the action level.

3. EPA's Method for Modeling "Fenceline" Benzene Concentrations is Flawed

In the preamble to the Proposed Rule, EPA describes its methodology for developing the action level for the fenceline monitoring program, as follows:

We estimated the long-term ambient benzene concentrations at each coke oven facility using the emission inventory and the EPA's American Meteorological Society/EPA Regulatory Model dispersion modeling system (AERMOD). Concentrations were estimated by the model at a set of polar grid receptors centered on each facility, as well as surrounding census block centroid receptors extending from the facility outward to 50 km. For purposes of this modeling analysis, we assumed that the nearest off-site polar grid receptor was the best representation of each facility's fenceline concentration, unless there was a census block centroid nearer to the fenceline than the nearest off-site polar grid receptor or an actual receptor was identified from review of the site map. In those instances, we estimated the fenceline concentration as the concentration at the census block centroid. Only receptors (either the polar or census block) that were estimated to be outside the facility fenceline were considered in determining the maximum benzene level for each facility. The maximum benzene concentration modeled at the fenceline for any coke oven facility is 3 $\mu\text{g}/\text{m}^3$ (annual average).⁵¹

EPA's proposed action level is too low because EPA's methodology for estimating fenceline benzene concentrations underestimates the concentration of benzene at the actual coke facility fenceline. As described above, EPA's approach merely approximates a fenceline of each facility with a polar receptor grid, which incorrectly assumes each facility's fenceline is circular. All byproduct recovery coke facilities have irregularly shaped or elongated fencelines, which EPA can confirm by reviewing the Fenceline Monitoring Plans that facilities were required to submit as

⁵¹ *Id.*

part of the 2022 ICR or the fenceline maps submitted by the COETF in August 2020.⁵²

EPA's approach simply models maximum benzene concentrations for an imaginary circular coke facility, and so does not accurately represent the true fenceline where benzene monitors would be located under the proposed fenceline monitoring requirements. EPA's approach results in "fenceline" locations (approximated using polar receptors) that are actually far outside of the actual fenceline, resulting in "fenceline" concentration estimates that are widely dispersed (and thus lower concentrations) than what may be at the true fenceline located closer to the coke facility. As a result, EPA's approach systematically produces lower estimated benzene concentrations at an imagined "fenceline" than what would be the case had EPA modeled the true fenceline, making EPA's proposed action level invalid. In fact, when one of the facilities estimated by EPA to have the highest fenceline concentrations (Facility ID 39155AM) is modeled using receptors at the true fenceline, the estimated maximum benzene concentration at the fenceline increases by at least a factor of 2.

Furthermore, as explained above, fenceline monitoring would not differentiate between source category and non-source category benzene emissions, nor between onsite and offsite sources. Fenceline monitors would be expected to measure concentrations resulting from low-lying, less buoyant non-source category emissions at a much higher percentage compared to source category sources such as combustion stack releases or coke batteries, which have much greater buoyancy. With respect to source category benzene emissions, the primary emissions are those exiting out of physical stacks or hot, buoyant releases such as coke oven battery fugitive emissions. These emissions have much greater potential to disperse above ground level fenceline monitors. Accordingly, there is a greater likelihood that fenceline monitors would register concentrations resulting from low-lying emissions sources, such as byproduct recovery facilities, as well as from offsite regional sources. Based on remodeling of the highest facility with receptors at the true fenceline, the receptor with the highest benzene modeled concentration is overwhelmingly due to the byproduct recovery facility (99.06%), while other non-category sources (0.93%) and category sources (0.01%) result in very low modeled concentrations.

⁵² Email from D. Ailor, ACCCI/COETF, to D.L. Jones, EPA OAQPS, Providing Follow-up on Topics Discussed in 7/29/2020 Meeting Between EPA and the COETF (Aug. 24, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0543>.

The proposed fenceline monitoring requirements are unlawful due to EPA's lack of authority to regulate non-category sources and the reality that fenceline monitors will be skewed by offsite and onsite non-category sources of benzene emissions. Nonetheless, if EPA decides to move forward with finalizing any fenceline monitoring requirements, EPA must update or re-run the modeling to establish an action level that more accurately reflects the actual measured concentrations that would be present at the true fenceline of each facility using allowable emissions for all facility sources, particularly in light of the combination of source category and non-source category emissions in close proximity, and those requirements must be narrowly drawn to apply only to the Coke Ovens source category and sampling monitors located so as to monitor emissions only from coke oven batteries and no other sources. Further, owners/operators must be allowed to subtract out emissions from both offsite sources and onsite non-source category sources.

4. EPA Underestimates the Cost of the Proposed Fenceline Monitoring Requirements

According to the Proposed Rule preamble, EPA estimates the total costs for fenceline monitoring to be \$116,000 per year per facility (including reporting and recordkeeping), or approximately \$1.3 million annually for the industry (11 affected facilities).⁵³ In its Fugitive Monitoring Memorandum,⁵⁴ EPA presents annual costs that sum to \$106,745 per facility (which includes \$70,000 per year for the testing and \$36,745 per year for recordkeeping and reporting); it is not clear how EPA arrived at the "per facility" annual cost of \$116,000 cited in the preamble. In its Compliance Cost Memorandum,⁵⁵ EPA attempts to support a cost estimate for the fenceline monitoring program by assuming up to 24 sampling locations at a given facility. However, EPA underestimates the cost for the fenceline monitoring program. Based on actual costs incurred during the 2022-2023 ICR collection process, the COETF estimates the annual cost for a facility with 12 sample locations to range between \$125,500 and \$157,500, based on the following breakdown:

- Monitoring plan: \$5,000-\$10,000 (likely a one-time fee, but may require updating)

⁵³ 88 FR at 55888.

⁵⁴ EPA, Fugitive Monitoring at Coke Oven Facilities, Table 10 (Jul. 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0880>.

⁵⁵ EPA, Coke Ovens Risk and Technology Review: Compliance Costs (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0884>.

- Sampling equipment and analysis: \$45,000-\$50,000
- Onsite sampling support: \$45,000-\$55,000
- Data analysis: \$25,000-\$35,000
- Electronic results submission: \$5,500-\$7,500

Accounting for economies of scale, the cost is expected to be nearly \$200,000 for a facility with 24 sample locations, or nearly double EPA's estimate.

In addition, EPA's costs assume that a facility would not need to install and operate an onsite meteorological station. Costs are expected to be even higher if a facility needs such a station. The COETF estimates that the capital cost for such a meteorological station are approximately \$27,000 per facility (depending on electrical power infrastructure available), plus approximately \$2,000 per year per facility for system maintenance.

Importantly, EPA's estimate does not take into account the cost of conducting a root cause analysis and taking corrective action, if needed. Depending on the nature of the root cause analysis and corrective action required, these activities would cause costs to increase substantially. Costs would be further exacerbated due to excessive corrective actions that would be needed to achieve EPA's invalid action level.

Based on the fenceline monitoring data collected as part of the 2022-2023 ICR process, it seems likely that facilities would exceed EPA's proposed benzene action level (3 $\mu\text{g}/\text{m}^3$) even when facilities are operating in full compliance with all standards. These facilities would be required to conduct needless root cause analyses and take corrective action despite the fact that they are operating in compliance with all standards, even though the source category presents very low and acceptable risk to public health with an ample margin of safety.

5. Any Revised Fenceline Monitoring Program Must Include Several Key Elements

Based on the legal and technical flaws detailed above, EPA should not include fenceline monitoring requirements in the final rule. However, if EPA nevertheless finalizes revised fenceline monitoring requirements, there are several key elements that EPA should incorporate into any redesigned monitoring program.

First, any redesigned monitoring program should use benzene as a single surrogate chemical as EPA has proposed, rather than requiring facilities to monitor for multiple pollutants, as in the overly burdensome and costly requirements under the 2022 ICR. The use of passive diffusive tube samplers should be retained.

Second, any revised fenceline monitoring program should allow facilities to reduce monitoring frequency when benzene concentrations remain below an appropriately determined trigger level. However, the reduced monitoring approach in the Proposed Rule is both too difficult for a facility to achieve and does not adequately reduce monitoring frequency to avoid unnecessary burdens and costs. As EPA has proposed:

- If a facility maintains the fenceline concentration below $0.3 \mu\text{g}/\text{m}^3$ (i.e., 10% of the action level) at any individual monitor for two years, the sampling frequency at that monitor could be reduced by 50% (e.g., two weeks of sampling for every four-week period);
- For each sampling location and monitor that continues to register below $0.3 \mu\text{g}/\text{m}^3$ for an additional two years, the sampling frequency could be reduced to approximately once per quarter, with sampling occurring every 6th two-week period (i.e., five two-week periods could be skipped between active sampling periods);
- If a monitor at the quarterly frequency continues to maintain a concentration of $0.3 \mu\text{g}/\text{m}^3$ for an additional two years, sampling at that monitor could be reduced to annual sampling; and
- If the concentration at any monitor location that is on reduced monitoring frequency increases above $0.3 \mu\text{g}/\text{m}^3$ at any time, monitoring would need to immediately return to the top level (i.e., most frequent and most burdensome) sampling frequency.

It seems obvious that monitoring frequency should be (1) eliminated when a facility is in hot or cold idle, and (2) reduced over time when monitors are measuring concentrations below the action level. However, setting the monitoring reduction trigger level at only 10% of the action level is much too low and would force facilities with extremely low monitoring concentrations to continue to incur the cost and burden of a monitoring program with little or no compliance or health risk benefit. Based on the fenceline monitoring data collected for the 2022 ICR, benzene emissions from offsite sources (e.g., neighboring facilities, ships on adjacent rivers

and harbors, etc.) alone result in concentrations exceeding 10% of the proposed action level, so EPA must substantially raise any monitoring reduction trigger level to account for this. The COETF believes that the trigger level should be set equal to 75% of a significantly higher action level. This is consistent with testing requirements in other NESHAPs where the frequency of performance testing can be reduced when results are 75% or less of the pollutant limit.

In addition, the COETF notes that:

- The “delta c” calculation is not sufficient to account for offsite sources of benzene when there are significant offsite sources or when wind direction information demonstrates the impact of offsite sources on monitoring locations. For example, the ICR fenceline monitoring data for the CC Burns Harbor IN facility demonstrate that the highest benzene concentrations are associated with sources at the adjacent port facility and are not located near the coke facility; and
- Comparing the rolling average “delta c” concentration to an action level on a 2-week basis is too frequent. This frequency should be reduced to once per quarter, which would still allow facilities to take timely action in response to concentrations above an action level.

Finally, the COETF believes that facilities in compliance should be able to accelerate the rate at which monitoring frequency is reduced and should be allowed to “off-ramp” the fenceline monitoring program entirely. In this regard, any fenceline monitoring program should include the following elements:

- For a fenceline monitoring location that is at or below the trigger level for 1 year, the sampling frequency for that location should be reduced from every 2 weeks to once quarterly;
- For a monitoring location that continues to remain at or below the trigger level for an additional 1 year (4 quarters), the sampling frequency for that location should be further reduced to annual sampling;
- For a monitoring location that continues to maintain an annual concentration at or below the trigger level for an additional year, sampling at that monitoring location should end and no further monitoring be required; and

- If a monitoring location on reduced frequency increases to exceed the final trigger level, the frequency of sampling for that location should increase 1 tier (e.g., annual sampling frequency should increase to quarterly).

If a monitor is inactive during a sampling period, the Proposed Rule says to treat the concentration at that monitor as zero.⁵⁶ However, the COETF believes that inactive stations should not be considered in the “delta c” calculation for the monitoring periods during which they are inactive. In addition, the COETF believes that a facility should be allowed to maintain at least 2 active monitoring stations before completely off-ramping the monitoring program. This would enable the facility to still calculate the “delta c” concentration from 2 active monitor results for comparison to the action level, which would not be possible if only 1 monitoring location remained.

In addition to modifying the monitoring reduction requirements as outlined above, which relies on individual monitors to remain below the trigger level, the COETF also believes that the Proposed Rule should include an option to allow the entire monitoring network to reduce monitoring frequency, provided results are consistently below the action level. The COETF proposes the following criteria that would allow a reduction in the monitoring frequency of the entire network:

- If the “delta c” concentration is at or below the action level for 1 year, the sampling frequency for the entire active monitoring network⁵⁷ should be reduced from every 2 weeks to quarterly sampling;
- If the “delta c” concentration is at or below the action level for an additional 1 year (4 quarters), the sampling frequency for the entire active monitoring network should be further reduced to annual sampling;
- If the “delta c” concentration is at or below the action level for an additional year, sampling for the entire active monitoring network should end and no further monitoring should be required; and
- If the “delta c” concentration increases to exceed the action level, the frequency of sampling for the entire active monitoring network should

⁵⁶ EPA, Coke NESHAP Redline Version of Proposed Rule Changes for 40 CFR Part 63, Subpart L. § 63.314 Fenceline Monitoring Provisions, page 52
<https://www.regulations.gov/document/EPA-HQ-OAR-2003-0051-0753>.

⁵⁷ The “active” network would include any monitors that have not been inactivated due to concentrations below the trigger level.

increase one tier (e.g., annual sampling frequency should increase to quarterly).

5. PROPOSED TECHNOLOGY REVIEW REQUIREMENTS

1. EPA's Proposed Revisions to the Allowable Percent Leaking Doors, Lids, and Offtakes Are Unlawful Because the Revisions Are Not Based on Any Development in Practices, Processes, or Control Technologies

EPA proposes to lower the allowable leak limits for doors, lids, and offtakes based on claimed “improvements in leak control at coke oven facilities”⁵⁸ Specifically, for facilities with coke production capacity greater than 3 million tons per year (tpy), EPA proposes to lower the allowable leaking door limit for “tall” doors from the current limit of 4% to 1.5% and for “not tall” doors from 3.3% to 1.0%.⁵⁹ For facilities with coke production capacity less than 3 million tpy, EPA proposes a new leaking door limit of 3.0% for all sizes of doors – both “tall” and “not tall.” EPA claims the new proposed limits would “ensure continued low emissions from leaking doors” and “reflect improvements in performance of the facilities to minimize leaks from doors.”⁶⁰

EPA also proposes lower leak limits for lids and offtakes. The current limits are 0.4% leaking lids and 2.5% leaking offtakes, which EPA proposes to lower to 0.2% and 1.2%, respectively. Like the proposed changes to the door leak limits, EPA claims that the “reduced levels reflect improvements in performance of the facilities to minimize leaks from lids and offtakes” and “both proposed changes to the limits would ensure continued low emissions from leaking lids and offtakes.”⁶¹

Yet, despite EPA's claim to have identified “improvements in leak control,” the Proposed Rule and rulemaking dockets do not identify any “developments” at all in leak control practices, processes, or control technologies. The only “improvement” to which EPA points is leak rate data showing coke facilities are complying with (and in some cases over-complying with) the existing leak limits for doors, lids, and offtakes. However, leak rate data are not a “development” in “practices, processes, and control technologies.” Leak rate data, like other forms of emissions data, are simply information about a practice, process, or control technology. So, while the

⁵⁸ 88 FR at 55884.

⁵⁹ EPA states that the lower limits for facilities with coke production capacity greater than 3 million tpy would currently only apply to USS Clairton PA. See *id.*

⁶⁰ 88 FR at 55884.

⁶¹ *Id.* at 55884.

leak rate data may be new, the underlying leak control practices and processes that the data describe are not new. Indeed, the currently used industry-wide leak control practices existed and were considered during development of the original MACT standards and so are not “developments” under section 112(d)(6).

Per EPA’s technology review methodology, the Agency “consider[s] any of the following to be a “development:”

- Any add-on control technology or other equipment that was not identified and considered during development of the original MACT standards;
- Any improvements in add-on control technology or other equipment (that were identified and considered during development of the original MACT standards) that could result in additional emissions reduction;
- Any work practice or operational procedure that was not identified or considered during development of the original MACT standards;
- Any process change or pollution prevention alternative that could be broadly applied to the industry and that was not identified or considered during development of the original MACT standards; and
- Any significant changes in the cost (including cost effectiveness) of applying controls (including controls the EPA considered during the development of the original MACT standards).⁶²

Leak rate data showing compliance with existing limits do not qualify as a “development” under any of these criteria. Moreover, compliance with the leak rate limits is required under the existing regulations.

Across the cokemaking industry, leak control for doors, lids, and offtakes is achieved through operational and maintenance work practices, not through add-on pollution controls or other equipment; and the current leak control methods existed and were considered during development of the original MACT standards. Therefore, the first and second criteria do not apply. EPA’s use of new leak rate data for coke battery facilities is not based on any previously unidentified leak control work practices, operational procedures, process changes, add-on controls, or pollution prevention

⁶² *Id.* at 55867.

alternatives. Finally, EPA does not claim that controls that were previously available, but that were not cost effective, are now available and cost effective.

In reality, EPA's approach improperly equates data showing overcompliance with existing standards as "developments" in leak control practices and processes. Nothing in the language of section 112(d)(6) gives EPA authority to ratchet-down existing MACT floor limits based solely on data showing overcompliance with those existing limits.

The irrationality of EPA's proposal to treat new leak rate data as a "development" is further illustrated by the fact that new emissions-related data are generated all of the time. Indeed, EPA received leak rate data and other test data in response to the 2016 and 2022 ICRs. Under EPA's proposed approach, prior to conducting an 8-year technology review, the Agency could simply require facilities to provide test data through an ICR and then claim that data showing compliance with existing standards qualify as "improvements" justifying stricter standards, even in the absence of any actual new developments in practices, processes, or control technologies and when compliance with existing standards is already required.

In sum, EPA should not finalize the proposed leak limits because the Proposed Rule fails to demonstrate that there have been any new cost-effective developments in leak control practices, processes, or control technologies for doors, lids, and offtakes.

2. The Proposed Leak Limits for Doors, Lids, and Offtakes Are Not Explained or Justified as "Necessary"

EPA also fails to provide an adequate technical rationale or basis for the proposed leak limits, and it is unclear how EPA calculated the limits or the data used in the calculations. These are decisive flaws, and EPA should not finalize the proposed changes to leak limits for doors, lids, and offtakes.

First, EPA does not demonstrate why coke facility production capacity is a factually sound basis for establishing differing door leak limits. EPA offers no basis or reasoning for the conclusion that unspecified "improvements in leak control" at coke facilities with production capacities greater than 3 million tpy are different from (and produce lower leak rates than) leak control methods employed at lower production capacity facilities. In fact, EPA does not identify any differences in leak control methods – based on production capacity or otherwise – and the COETF is not aware of any such differences. There is also no explanation for why EPA selected a 3 million tpy threshold versus some other level of coke production capacity.

Moreover, it is counterintuitive to presume that higher coke production capacity correlates to lower leak rates. The existing Subpart L door leak standards are not based on coke production capacity; and one would expect that higher production facilities have a larger number of ovens in operation, with more cycles of charges and pushes, etc. All of these factors would be expected to correlate with similar or higher leak rates compared to smaller capacity facilities. EPA offers no basis for its apparent conclusion that the opposite is true. Therefore, using production capacity as the basis for setting different leak limits is entirely arbitrary, absent any demonstrated differences in the leak control practices and processes used at higher versus lower production capacity facilities.

Second, EPA offers no basis for its conclusion that “tall” and “not tall” doors should have the same leak limits at facilities with less than 3 million tpy production capacity. Since promulgation in 1993, the Subpart L door leak limits have been based on the height of the door (i.e., “tall” doors (5 meters and taller) and “not tall” doors) because taller doors are more correlated with the occurrence of leaks. “Tall” doors have a longer perimeter length compared to “not tall” doors, and longer perimeters have more area where leaks can occur. For example, a 6-meter “tall” battery door has 43% more perimeter length compared to a 4.3-meter “not tall” door. Therefore, “tall” doors are expected to have higher leak rates compared to “not tall” doors, and the existing door leak limits reflect these differences.

EPA seemingly acknowledges this by proposing different leak limits for “tall” and “not tall” doors for facilities with greater than 3 million tpy production capacity. Yet EPA offers no explanation why size of the door matters for leak limits at higher production facilities but size does not matter for lower production facilities. It would be entirely arbitrary for EPA to disregard the physical differences in door sizes, as those differences affect leak rates, and to set identical leak limits for all sizes of doors for lower production capacity facilities, particularly when the existing standards have higher limits for “tall” doors.

Finally, the proposed leak limits should not be finalized because EPA has not provided adequate information regarding what data were used and how EPA calculated the proposed leak limits for doors, lids, and offtakes. Information regarding the proposed door leak limits is found in the Technology Review for the Coke Ovens: Pushing, Quenching, and Battery Stack and Coke Oven Batteries Source Categories document. This document identifies the proposed limits, but provides little information on how EPA derived the limits. Beyond a sentence stating that “[t]he 2022 facility-average data showed a high of 46 percent of the standard for tall doors (standard 4.0 percent); a high of 52 percent of the standard for all other

doors, i.e., not tall (standard 3.3 percent); and a high of only 36 percent of the standard for foundry (standard 4.0 percent) ...,”⁶³ it is not apparent how EPA derived any of the proposed leak limits including the averaging time EPA used.

It is also not clear whether EPA used or disregarded the 2022 ICR data in developing the proposed limits, making it difficult to verify EPA’s claim regarding the facility-average data. Table 5 in the Technology Review Memorandum⁶⁴ also includes data from coke facilities that are permanently shut down or no longer operating, and it is unclear if these data were used in whatever calculations EPA made in determining the proposed limits.

EPA’s analysis of costs and emissions reductions is equally confusing. In its Economic Impact Analysis for the Proposed Rule, EPA states that “[t]he proposed lowering of leak limits for coke oven doors, lids, and offtake systems under 40 CFR part 63, subpart L is not expected to achieve actual emission reductions but reduce allowable emissions.”⁶⁵ However, EPA’s statement is not supported by the data in Table 5 of EPA’s Technology Review Memorandum,⁶⁶ which indicate that the actual emissions for at least one facility (CC Warren OH) will likely be impacted by the reduced offtake leak limit. Specifically, the 2022 ICR data presented show that the average offtake leak rate at CC Warren OH is 1.3%, which complies with the existing limit of 2.5% but exceeds EPA’s proposed limit of 1.2%, as shown in Table 8 below (reproduced from Table 5 in EPA’s Technology Review Memorandum).

⁶³ EPA, Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC), and NESHAP for Coke Oven Batteries (40 CFR part 63, subpart L), page 19 (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0873>.

⁶⁴ EPA, Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC), and NESHAP for Coke Oven Batteries (40 CFR part 63, subpart L), Table 5 (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0873>.

⁶⁵ EPA, Economic Impact Analysis for the Proposed National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, Residual Risk and Technology Review; National Emission Standards for Hazardous Air Pollutants for Coke Oven Batteries Technology Review (Jul. 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0889>.

⁶⁶ EPA, Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC), and NESHAP for Coke Oven Batteries (40 CFR part 63, subpart L) (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0873>.

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Table 8. Summary of Byproduct Recovery Coke Facility Method 303 Performance and COE Emissions from 2022 ICR Data⁶⁷

Method 303 Parameters		2022 Coke 114 Request Method 303 Data by By-product Facility ¹ and Process								
		ABC-Tarrant-AL	CC-Follansbee-WV	CC-Middletown-OH	CC-BurnsHarbor-IN	CC-Monessen-PA	CC-Warren-OH	BLU-Birmingham-AL	EES-RiverRouge-MI	USS-Clairton-PA
Regulatory Track ¹		LAER	LAER	MACT	LAER	LAER	LAER	LAER	LAER	LAER
No. Batteries		3	4	1	2	2	1	3	1	10
No. Ovens		132	224	76	164	56	85	120	85	708
Charging										
Seconds per Charge	Limit	12	12	12	12	12	12	12	12	12
	Facility Average	4.7	6.6	5.8	8.4	4.4	4.5	4.0	1.8	2.4
Facility Average as % of Limit		39%	55%	49%	70%	36%	38%	34%	15%	20%
COE Emissions (TPY)		0.070	0.068	0.089	0.29	0.056	0.074	0.056	0.035	0.29
Doors										
Percent Leaking	Limit	4.0%	3.3%/4.0% ³	3.3%	4.0%	3.3%	3.3%	4.0%	4.0%	3.3%/4.0% ⁴
	Door Type ³	foundry	all other/tall ³	all other	tall	all other	all other	foundry	tall	all other/tall ⁴
	Facility Average	0.85%	0.44%	1.7%	1.8%	0.11%	1.2%	1.4%	0.12%	0.46%
Facility Average as % of Limit		21%	13%/11% ³	52%	46%	3.4%	36%	36%	2.9%	14%/11% ⁴
COE Emissions (TPY)		2.3	3.2	1.4	3.0	0.70	1.4	2.0	1.1	9.7
Existing Equation										
COE Emissions (TPY)		1.0	0.71	0.70	1.6	0.031	0.54	0.87	0.053	1.7
Revised Equation										
Lids										
Percent Leaking	Limit	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
	Facility Average	0.014%	0.0023%	0.053%	0.075%	0.0%	0.084%	0.087%	0.013%	0.0054%
Facility Average as % of Limit		3.5%	0.57%	1.3%	19%	0.0%	21%	22%	3.3%	1.4%
COE Emissions (TPY)		0.0032	0.00095	0.00040	0.019	0	0.0070	0.016	0.0015	0.0057
Offtakes										
Percent Leaking	Limit	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
	Facility Average	0.0061%	0.25%	0.014%	0.36%	0.023%	1.3%	0.69%	0.068%	0.42%
Facility Average as % of Limit		0.25%	9.9%	0.56%	14%	0.91%	52%	27%	2.7%	17%
COE Emissions (TPY)		0.00020	0.049	0.00069	0.019	0.00084	0.072	0.028	0.0038	0.19

¹All facilities except CC Middletown-OH are subject to the LAER 1/1/2010 limits. CC Middletown-OH is subject to the MACT Track RTR 7/2005 limits.

²Tall doors are doors greater than 6 meters (20 ft) in height. "All other" doors are either not tall or not at a foundry coke facility. HNR facilities are not permitted to have any leaking doors and do not have lids or offtakes.

³Three of 4 batteries at CC Follansbee WV are "all other" with door limits of 3.3% and the fourth battery is "tall" with door limit of 4.0%. Data presented for both.

⁴Eight of the 10 batteries at USS Clairton PA are "all other" with door limits of 3.3% and two batteries are "tall" with door limits of 4.0%. Data presented for both.

In its Economic Impact Analysis for the Proposed Rule, EPA concludes that the revised offtake leak limit is not expected to lead to additional costs or the implementation of additional work practices. Specifically, EPA states: "EPA expects all facilities can meet the revised leak limits without incurring additional cost as a result of this proposed change" and "[t]he affected facilities currently meet the proposed leak limits, so these amendments are not expected to require changes to work practices or other additional costs."⁶⁸ However, facilities that are currently exceeding the proposed offtake limit (e.g., CC Warren OH) would need to take steps, including potentially investing in additional controls or work practice measures, in order to bring emissions under the proposed limit.

⁶⁷ EPA, Economic Impact Analysis for the Proposed National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks, Residual Risk and Technology Review; National Emission Standards for Hazardous Air Pollutants for Coke Oven Batteries Technology Review, Table 5 (Jul. 2023)

<https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0889>.

⁶⁸ *Id.* at page 2-6.

EPA has not provided adequate explanation regarding how the revised offtake limit was established, or regarding how EPA considered (or failed to consider) coke facilities with existing leak rates in excess of the proposed limits. EPA should not finalize the proposed offtake limits based on this conflicting leak rate information coupled with EPA's inadequate explanation of how the proposed limit was developed.

For all the foregoing reasons, EPA should not finalize the proposed leak limits for doors, lids, and offtakes. If EPA nonetheless plans to proceed with any revisions to the leak rate limits, EPA must first publish a supplemental proposal containing the legally required justification under section 112(d)(6) for revising the existing limits, provide the data and calculations (including a 99% Upper Predictive Limit (UPL) statistical analysis) supporting the proposed limits, and provide a supplemental time period for public review and comment.

3. The COETF Supports a Revised Door Leak Equation that Uses the Bench-to-Yard Ratio, instead of a Fixed 6% Value

As part of the technology review under section 112(d)(6), EPA proposes to use a revised version of the percent leaking doors equation, rather than the equation that has historically been used to estimate COE from leaking oven doors. In the 2005 RTR for Coke Oven Batteries, COE from leaking oven doors were estimated using the following equation taken from the AP-42 chapter on coke production:⁶⁹

$$\text{COE}_{\text{doors}} (\text{lb/hr}) = \text{ND} \times (\text{PLD}_{\text{yard}}/100) \times (0.04 \text{ lb/hr}^{70}) + \text{ND} \times (\text{PLD}_{\text{bench}}/100) \times (0.023 \text{ lb/hr})^{71}$$

Where:

ND = number of doors

PLD = percent leaking doors

Bench = walking platform running next to the ovens (and doors)

Yard = 50 to 100 feet from the oven doors

PLD_{yard} = percent of doors with visible leaks observed from the yard

PLD_{bench} = percent of doors with visible leaks only observable from the bench

⁶⁹ EPA, Compilation of Emission Factors (AP-42), Section 12.2, Coke Production <https://www3.epa.gov/ttn/chief/old/ap42/ch12/s02/final/c12s02.pdf>.

⁷⁰ Emission factors for leaks from yard (0.04 lb/hr) and bench (0.023 lb/hr) were developed from 1981 coke facility data and reported in AP-42.

⁷¹ EPA, Compilation of Emission Factors (AP-42), Section 12.2, Coke Production <https://www3.epa.gov/ttn/chief/old/ap42/ch12/s02/final/c12s02.pdf>.

Due to worker safety concerns with mobile equipment, Method 303 observations are not typically taken from the bench. Therefore, this door leak equation has historically included a default value of 6% for leaking doors visible only from the bench, as shown below:

$$\text{COE}_{\text{doors}} (\text{lb/hr}) = \text{ND} \times (\text{PLD}_{\text{yard}}/100) \times (0.04 \text{ lb/hr}) + \text{ND} \times (6\%/100) \times (0.023 \text{ lb/hr})$$

Hence, the 6% value for leaking doors visible only from the bench was presented as an absolute value and not set in relation to the percent leaking doors visible from the yard, which is the only measured value related to door emissions. Support for an alternative equation was first provided in the “response to comments” included in the July 2008 AP-42 background information document where EPA stated: “[i]t is not clear that the difference should be a constant rather than a ratio, i.e., the difference between yard and bench leaks may change as the total number of leaks decreases.”⁷² The COETF agrees with this and supports replacing the default fixed value of 6% leaking doors visible only from the bench so that total emissions from doors are not over-stated and are in relation to the measured percent leaking doors visible from the yard and not merely a fixed value.⁷³

EPA has proposed revising the door leak emissions equation to include a bench-to-yard “ratio” instead of the 6% default value for doors seen leaking from the bench in the equation. The revised value in the equation (i.e., the “adjustment ratio”) is based on the data obtained from the aforementioned 1981 door leak study; but, instead of using the 6% default value, the equation includes the ratio of the value for percent leaking doors visible only from the bench to the value for percent leaking doors visible from the yard. EPA uses this adjustment ratio with current measured percent leaking doors from the yard to estimate the current percent leaking doors visible only from the bench. Using the data from the 1981 door leak study, the ratio of bench-only emissions to yard emissions is $((12.4 - 6.4)/6.4)$, equal to $6.0/6.4$ or 0.94 . This adjustment ratio (0.94) is multiplied by measured data for percent leaking doors measured from the yard to estimate the bench-only component of door emissions in

⁷² EPA, Emission Factor Documentation for AP-42, Section 12.2, Coke Production, Chapter 6, Summary of Comments and Responses for the July 2001 Draft, Response A-3 page 6-5 (May 2008) https://www3.epa.gov/ttnchie1/ap42/ch12/bgddocs/b12s02_may08.pdf.

⁷³ 88 FR at 55889.

the equation for COE for doors. EPA proposes to use this adjustment ratio in the revised equation below:

$$\text{COE}_{\text{doors}} (\text{lb/hr}) = \text{ND} \times (\text{PLD}_{\text{yard}}/100) \times (0.04 \text{ lb/hr}) + \text{ND} \times (\text{PLD}_{\text{yard}} \times 0.94)/100) \times (0.023 \text{ lb/hr})$$

The COETF has performed a similar analysis using the door leak data gathered as part of the 2022 ICR door leak study requested by EPA. The ratio of bench-only to yard emissions is $(2.1 - 0.8)/0.8$, equal to $1.3/0.8$ or 1.75 . At typical door leak percentage observations, this ratio is very similar to that developed using data from the 1981 door leak study, which further supports the use of a ratio method rather than an assumed 6% absolute value.

The COETF supports EPA's use of the bench-to-yard "adjustment ratio" in place of the 6% fixed value for bench-only visible door emissions. This allows coke facilities to continue measuring visible emissions from the yard rather than the bench. Not only is this approach more accurate, but there are potentially life-threatening safety considerations with conducting Method 303 observations from the bench, as the COETF has previously communicated to EPA.⁷⁴ These include physical dangers to Method 303 observers (e.g., struck-by hazards) from moving pusher machines, door machines, and other equipment. Method 303 observers walking the length of the bench could be at serious risk of injury or fatality. In view of the above, door leak limits should continue to be based on Method 303 observations made from the yard.

Finally, EPA contends that changing from the 6% absolute value to a ratio is supported by developments in door leak prevention methods or technology; however, that is not the case. EPA does not identify any new feasible, cost-effective developments in door leak prevention methods or technologies, and the COETF is not aware of any such developments. Rather, the original "absolute value" approach was never a sound approach to estimating leaks that are not visible from the yard, because it consistently overestimates percent leaking doors at typical door leak rates.

⁷⁴ D. Ailor, ACCCI/COETF, to C. French and D.L. Jones, EPA OAQPS, COETF Concerns Regarding EPA's June 28, 2022 Coke Ovens Section 114 Information Collection Requests (ICRs) (Aug. 2, 2022) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0654>.

4. EPA Should Not Revise the Existing Quenching Work Practice Standards

Existing Subpart CCCCC requires that baffles limit quench towers to 5% open space and that dissolved solids in quench water be no greater than 1,100 mg/L. In addition, the existing standards also include work practice standards, as follows:

- Facilities must wash the baffles in each quench tower once each day that the tower is used to quench coke (with some exceptions, such as freezing weather, as outlined in the rule);
- Facilities must inspect each quench tower monthly for damaged or missing baffles and blockage; and
- Facilities must initiate repair or replacement of damaged or missing baffles within 30 days and complete as soon as practicable.

Thus, quench tower emissions are currently controlled by baffles inside the quench towers, work practices to maintain and repair the baffles, and with limits on dissolved solids in quench water. EPA clearly states that it did not identify any development in practices, processes, or technologies to achieve further reductions of HAP emissions for the PQBS source category. Therefore, it is unclear on what legal basis EPA could revise the current quench tower standards.

EPA notes in its Maximum Achievable Control Technology Standard Calculations, Cost Impacts, and Beyond-the-Floor Cost Impacts for Coke Ovens Facilities Memorandum that “[t]he existing work practice standards for quench towers are the most appropriate standards at this time, as truly repeatable testing is near impossible on these highly variable sources. There are also safety considerations with testing these quench tower sources. As such, no MACT limits were developed for quench towers.”⁷⁵

The COETF supports retaining the existing work practices for quench towers. The existing work practices are effective at reducing emissions from quench towers, and testing of quench towers may present safety concerns due to the high coke temperatures, steam, and other hazards present. In addition, with respect to testing quench towers, there have been technical issues (as documented in EPA’s 2016 Coke ICR FAQs #13) with satisfying the required EPA Method 1 upstream and

⁷⁵ EPA, Maximum Achievable Control Technology Standard Calculations, Cost Impacts, and Beyond-the-Floor Cost Impacts for Coke Ovens Facilities under 40 CFR Part 63, Subpart CCCCC (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0859>.

downstream criteria during testing and the required EPA Method 2 isokinetic criteria with a natural draft air flow, which often results in the need to develop unique non-standard testing protocols that further complicate acquiring valid, accurate, and repeatable testing results.

6. PROPOSED MACT FLOOR STANDARDS

1. The Proposed Existing Source MACT Floor Standards Are Improperly Based on Calculations of Emissions Performance, Instead of Average Emissions Limitations, and Were Set Without Considering the Exorbitant Costs

EPA proposes to set NESHAP pursuant to section 112(d)(2) and (d)(3) for the following sources:

- Acid gases consisting of hydrogen chloride (HCl) and hydrogen fluoride (HF), mercury (Hg), and filterable PM (as a surrogate for non-Hg metals such as lead and arsenic) from heat nonrecovery (HNR) facility heat recovery steam generators (HRSG) main stacks, and bypass/waste (B/W) stacks;
- Acid gases (HCl and HF), HCN, Hg, and total polycyclic aromatic hydrocarbons (PAH) from pushing emissions control devices; and
- Acid gases (HCl and HF), HCN, Hg, and filterable PM (as a surrogate for non-Hg metals) from coke oven battery combustion stacks.

EPA proposes MACT floor limits for 15 of the 17 HAPs reviewed by EPA and beyond-the-floor limits for 2 of the HAPs (Hg and non-Hg HAP metals) from B/W stacks. The COETF's members do not own or operate HNR coke facilities; therefore, these comments focus only on the proposed MACT floor limits for pushing and coke oven battery combustion stacks.

CAA section 112(d)(3) provides that for new sources, the "maximum degree of reduction in emissions that is deemed achievable ... shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator." For existing sources, section 112(d)(3)(B) provides that the emission standards promulgated for existing sources shall not be less stringent than "the average emission limitation achieved by the best performing 5 sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory with fewer than 30 sources."

However, for existing source standards applicable to pushing and battery stacks, EPA proposes to establish a “MACT floor” using the average emission performance achieved by the best performing 5 sources,⁷⁶ versus using an average emission limitation (i.e., an existing standard established by a state or by EPA) achieved by those sources. The Proposed Rule does not identify existing emission limitations that apply to these sources and HAPs, and there is no indication that EPA attempted to compile this information. EPA offers no basis for its proposal to depart from the plain text of section 112(d)(3), which requires EPA to set the MACT floor based on the “average emission limitation achieved” by the best performing 5 sources.

Moreover, EPA is not required by the text of section 112(d), or by the *LEAN* decision, to set new “gap filling” MACT floors where, as here:

- Further reductions of these pollutants are not necessary due to very low risk of the source category;
- Controlling these pollutants has not been demonstrated for sources like coke battery combustion stacks;
- The cost of adding controls would be exorbitant; and
- The new standards would not be cost effective due to the extreme cost of controls and the minimal reductions in these pollutants that would be achieved.

In the context of performing a “gap filling” review of the existing standards, EPA should not continue its practice of setting MACT floor-level controls based solely on emissions data from best performing sources, without “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 ... ” as provided in CAA section 112(d)(2). Whatever the merits of EPA’s historical interpretation of section 112(d) – that it first establishes “minimum standards” based solely on emissions performance when initially setting MACT floors – that interpretation is not reasonable (and so is not permissible) where the cost of control is so extreme and the benefit of further emission reduction is minimal due to very low risk to public health.

The notion that section 112(d) prohibits EPA from considering costs and benefits when establishing MACT floors is not based on a plain language reading of the text.

⁷⁶ 88 FR at 55876.

And, upon close evaluation, the line of cases that touch on this issue, starting with *National Lime Ass'n v. EPA*,⁷⁷ are not based on a reasoned analysis of the plain language of the statute, as is often presumed. EPA should revisit its interpretation of section 112(d) in this regard and should consider all of the relevant factors, including “the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements” when establishing “gap filling” MACT floors. Specific comments on control costs and cost effectiveness of the proposed MACT floors are provided on pages 55-59 of these comments.

Finally, EPA does not fully evaluate and use the data collected by the industry at considerable cost as part of the 2022 ICR. While the COETF understands that analyzing data takes time, EPA’s rushed approach in this rulemaking shortcuts the review of EPA’s analysis by all stakeholders. Any additional analysis of the ICR data that EPA performs must be made available to the COETF and the broader public and an additional public comment period provided in order for EPA to comply with its rulemaking obligations under CAA section 307(d) and the Administrative Procedure Act.

2. The Proposed Filterable PM Limit for Battery Stacks Is Redundant of the Current Opacity and PM Standards, Is Not Necessary, and Should Be Eliminated

The current NESHAP for the PQBS source category includes opacity limits for battery stacks. Specifically, these include a daily average of 15% opacity for batteries on normal coking cycles and a daily average of 20% opacity for batteries on battery-wide extended coking (§ 63.7333(e)(1)). Opacity is measured using continuous opacity monitoring systems (COMS).

Opacity remains an effective surrogate for PM emissions, which EPA has recognized for decades. In summarizing the current state of knowledge regarding continuous monitoring of PM emissions, EPA has concluded that, “[o]pacity is used as a surrogate for PM emissions and provides qualitative information on the operation and maintenance of particulate control equipment.”⁷⁸ Studies going back to the 1970s have shown a strong correlation between mass concentration and opacity for a variety of sources, such as kraft pulp mill recovery furnaces, cement

⁷⁷ 233 F.3d 625 (D.C. Cir. 2000).

⁷⁸ EPA, Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring (Sept. 8, 2000) <https://www3.epa.gov/ttnemc01/cem/pmcmesknowfinalrep.pdf>.

kilns, and coal-fired boilers.⁷⁹ Such a correlation also exists for coke oven battery stacks. Indeed, according to EPA in the preamble for the Proposed Rule, “[b]attery stack opacity is perhaps the best single indicator of the maintenance status of coke ovens and could be considered as an indicator of fugitive and excess HAP emissions from coke oven batteries.”⁸⁰

Because opacity is a strong indicator of battery stack emissions, and because opacity limits effectively control PM and other non-volatile emissions, it is not necessary to add additional emission limits for filterable PM as a surrogate for non-Hg metals. The current opacity limits for battery stacks provide effective MACT floor-level control of filterable PM and, therefore, for non-Hg metals.

If EPA nevertheless pursues a battery stack PM limit, the proposed testing methods listed at § 63.305(c)(1), § 63.309(k)(1)(v) and § 63.7322(b)(1)(v) should include not only EPA Method 5 and approved alternative 5D, but also other approved alternatives including EPA Method 5B (Nonsulfuric Acid Particulate Matter) which is an approved alternative in applicable Title V permit terms to avoid varying sulfur-based compounds that can act as an interference in determining PM.

3. EPA Should Not Set a Standard for Hg from Pushing Emission Control Devices

EPA should not finalize a standard for Hg emissions from PECs. Based on the data in EPA’s Maximum Achievable Control Technology Standard Calculations, Cost Impacts, and Beyond-the-Floor Cost Impacts for Coke Ovens Facilities Memorandum, 6 of the 18 test runs (or 33%) for pushing Hg emissions on which the MACT floor calculations are based are flagged as BDL and the remaining results are flagged as DLL.⁸¹ These data confirm that Hg either is not present, or is present only in a fraction of the sampling train, such that a limit is not justified and compliance monitoring would be infeasible to implement.

⁷⁹ EPA, Measurement of the Opacity and Mass Concentration of Particulate Emissions by Transmissometry, EPA 650/2-74-128 (Nov. 1974) <https://nepis.epa.gov/Exe/ZyPDF.cgi/9101GJCN.PDF?Dockey=9101GJCN.PDF>.

⁸⁰ 88 FR at 55883.

⁸¹ EPA, Maximum Achievable Control Technology Standard Calculations, Cost Impacts, and Beyond-the-Floor Cost Impacts for Coke Ovens Facilities under 40 CFR Part 63, Subpart CCCCC (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0859>.

4. The MACT Floor Test Data Sets Are Too Limited and Do Not Represent Normal Variability in Emissions and Operating Conditions

EPA proposes to establish new pushing capture and control device emission limits for Hg, acid gases, HCN, and PAH and new byproduct recovery battery stack emissions limits for Hg, acid gases, HCN, and filterable PM. For each parameter there are test data for only 4 units comprising a single test with 3 test runs each totaling 12 test runs collected under EPA's 2016 ICR, except for Hg test data for which there are a total of 5 units/5 tests/15 test runs. These data do not accurately represent emissions from the source because they do not account for normal variability in operations, variability of coal blends and suppliers, and seasonal effects.

EPA defines a limited data set as having fewer than 7 samples (test runs, in this instance). Although EPA contends that data sets with more than 7 runs are not "limited," this is based solely on the mathematical formulation of the upper prediction limit, in particular the statistical t-score and z-score. The t-score and z-score increase as the number of samples decreases and begin to rise noticeably as the number of samples decreases below about 10. The incremental change in the t-score rises sharply as the number of samples decreases below 7 and is greater than 5%. One just as easily might also have chosen 10 samples below which the incremental t-score change is greater than 2%, or 5 samples below which the incremental t-score change is greater than 10%.

EPA contends that data sets with 7 or more runs are not "limited," based on the mathematical formulation of the upper prediction limit; however, a single test represents nothing more than a snapshot in time of emissions from a unit. A single test covering less than a handful of operating hours does not represent normal emissions from a unit at all times over the range of normal operating conditions during a typical year. Actual emissions will vary from time to time not only due to normal variations in process operations (differing coking times, variability in composition of feed materials and fuels, process operating conditions, etc.), but also due to seasonal variations in ambient weather conditions such as temperature, precipitation, and humidity (and corresponding impacts on fuel heat input, feed materials temperatures, etc.). For example, emissions of Hg are highly dependent on chemical content within the raw materials (e.g., Hg in coal). Mercury and chloride content in coal varies not only between coal mines, but also within a coal seam at the same mine.

For these reasons, the variability of emissions is under-represented in the calculated UPLs, resulting in emission limits that cannot be achieved with EPA's stated confidence and frequency. As such, it is not appropriate to establish standards using such limited emissions performance data as used in the Proposed Rule.

It is critical that any standards be established using complete data and UPL methodologies that adequately account for variability in operating conditions (e.g., normal and extended coking times) and in raw materials (e.g., coal content). As summarized below, the lack of demonstrated technical feasibility and the extremely high cost of add-on controls highlights the importance of setting standards that can be achieved by the MACT floor facilities under various operating conditions and accounting for variation in raw materials.

As noted, there are very limited test data available to evaluate the need for add-on controls to meet the proposed limits for PEC and battery stacks. In particular, there are 3 individual test runs in the limited stack test data⁸² that are more than 90% of the proposed limits, with 1 run nearly equal to the limit. Considering these data, it is reasonable to conclude that exceedances of the limits may occur and additional emission controls may be needed, if such controls are technically feasible and cost reasonable.

In Section 2.1.2 (Potential Control Technology for Pushing) of the Technology Review Memorandum, EPA identifies potential additional control technologies for pushing as including Activated Carbon Injection (ACI) for Hg and PAHs and Wet Alkaline Scrubbers (WAS) for acid gases and HCN. But based on its review, EPA concludes that "[n]o capture technology has been identified that demonstrates reduced emissions from pushing beyond the current technologies in use; therefore, no recommendations are made to pushing capture or control technology under this review."⁸³

In Section 2.3.2 (Potential Control Technology for Battery Stacks) of the Technology Review Memorandum, EPA identifies potential additional control technologies for battery stacks as including ACI for Hg and WAS for acid gases, HCN, and non-Hg

⁸² Emission factors are averages of individual facility test data found in the pushing and combustion MACT Floor calculations with coke production in the 2020 ICR data collection (from CY2016).

⁸³ EPA, Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC), and NESHAP for Coke Oven Batteries (40 CFR part 63, subpart L), page 6 (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0873>.

HAP metals. EPA similarly concludes that “[b]ecause no other add-on control technology was identified, a control strategy based on control device technology for battery stacks is not recommended at this time.”⁸⁴

Therefore, the application of additional controls for PEC and combustion stacks has not been demonstrated to be technically or economically feasible; and the add-on control options identified by EPA have not been demonstrated at byproduct recovery coke facilities, either domestically or internationally. Nonetheless, the COETF has reviewed the high-level cost effectiveness values calculated by EPA.

First, cost effectiveness values were computed based on limited emissions data for byproduct recovery coke facilities and HNR facilities using EPA’s cost data contained in the Maximum Achievable Control Technology Standard Calculations, Cost Impacts, and Beyond-the-Floor Cost Impacts for Coke Ovens Facilities under 40 CFR Part 63, Subpart CCCCC (May 1, 2023) (Cost Memo).⁸⁵ The COETF performed cost calculations using the methods described in the Cost Memo, but achieved only moderate success replicating the cost results reported by EPA. For example, cost effectiveness results calculated by the COETF for combustion stacks and PEC controls at several byproduct recovery coke facilities did not align with the results of EPA’s calculations, including WAS for PECs at CC Burns Harbor IN and both ACI and WAS for combustion stacks at USS Clairton PA.

In addition to cost evaluation calculations, Table 10 of the Cost Memo summarizes the air pollution control devices (APCDs) and control efficiencies; however, the following additional points are critical:

- Activated Carbon Injection (ACI) can be implemented where a baghouse or dust control system is in place to control Hg and PM (but not PAHs). However, byproduct recovery battery combustion stacks do not have existing PM controls. Therefore, ACI is not technically feasible for combustion stacks.
- It is also not technically feasible to control PAHs with ACI due to the large molecular weight of PAHs, which would result in plugging of activated carbon sites at the molecular level.

⁸⁴ *Id.* page 11.

⁸⁵ EPA, Maximum Achievable Control Technology Standard Calculations, Cost Impacts, and Beyond-the-Floor Cost Impacts for Coke Ovens Facilities under 40 CFR Part 63, Subpart CCCCC (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2003-0051-0785>.

Table 11 of the Cost Memo shows the exorbitant costs associated with installation of APCD at pushing operations with cost effectiveness values as follows:

- ACI Hg control per facility from \$876 million/ton to \$1.6 billion/ton pollutant removed;
- WAS acid gas control per facility from \$1.3 million/ton to over \$10 million/ton pollutant removed; and
- WAS HCN control from \$7 million/ton to over \$20 million/ton pollutant removed.

Likewise, Table 12 of the Cost Memo shows the excessive costs associated with installation of APCD for battery combustion stacks with cost effectiveness values as follows:

- ACI non-Hg HAP metals control per facility from \$4 million/ton to over \$28 million/ton pollutant removed;
- WAS acid gas control per facility from \$170,000/ton to over \$446 million/ton pollutant removed; and
- WAS HCN control per facility from \$1.9 million/ton to over \$6 million/ton pollutant removed.

These costs are clearly excessive and unreasonable, and they significantly exceed previous cost effectiveness values that have been accepted as reasonable. In addition, even these very high costs may be understated because some of EPA's cost assumptions are unclear and appear inaccurate. The following need to be corrected to yield more-accurate cost effectiveness values:

- Table C-15 for ACI appears to use a retrofit cost factor in the TCI equation at the byproducts recovery battery stacks, and Table C-16 includes duct costs but no costs for a baghouse. Given that there are no existing controls on any coke battery combustion stacks domestically or internationally, EPA's cost factors are flawed and inappropriate.
- Table C-17 BTF costs for combustion stacks are based on Ferroalloy costs, but Ferroalloy operations and emissions differ from byproduct recovery coke combustion operations and emissions in important ways. First, most Ferroalloy operations utilize a baghouse or other PM collection device where

an ACI system can potentially be retrofitted, while byproduct recovery coke combustion stacks do not have PM controls that can be retrofitted with ACI systems. Second, exhaust gas conditions, including temperature, flow rate, and pollutant loading are not similar; and substantial engineering and technical feasibility studies would be needed to evaluate control options for combustion stacks and their technical feasibility.

- With respect to retrofitting controls generally, byproduct recovery coke facilities have physical constraints on the space available for installation of any added equipment. These constraints cause a cost multiplier, depending on the nature and complexity of the retrofit, that can significantly increase the cost of installation. These physical constraints and the increased cost of installation cannot be quantified until engineering for a particular project is performed.

Due to the inadequate comment period, the COETF's members have not had enough time to complete additional testing and analysis to provide alternate MACT floor limits in these comments. Without additional test data, the COETF expects the proposed limits, based on inadequate data, will be regularly exceeded, forcing facilities to install expensive controls or curtail operations in order to meet the unjustified limits.

If EPA proceeds to finalize any of the proposed MACT floor emission limits, it first should revise the limits by employing an additional UPL adjustment factor to account for variability that is not adequately reflected in the underlying inadequate test data. Additionally, EPA should acknowledge that additional time and test data are needed for facilities to evaluate their operations in order to determine whether additional controls will be needed to ensure compliance and to plan for potentially significant compliance costs. As EPA has done in other rules, any final MACT floor emission limits should include provisions that allow new test data to be used to adjust the UPL calculations and revise the final limits to account for variability. We also request that EPA provide the maximum 3-year compliance schedule due to the lack of existing data to make these compliance determinations, and the time needed for facilities to conduct testing and to design, procure, and install additional controls as needed.

7. SPECIFIC EPA REQUESTS FOR COMMENT

The COETF provides the following in response to EPA's specific requests for comment in the Proposed Rule.

1. EPA Should Not Establish an Additional Opacity Standard for Coke Battery Combustion Stacks

The existing Subpart CCCCC standards include a daily (24-hour) average opacity limit of 15% for byproduct recovery coke battery combustion stacks on normal coking time and a limit of 20% for battery stacks on extended coking time. Each battery stack must be monitored for opacity using a COMS.

In the Proposed Rule, EPA requests comment on whether additional 1-hour battery stack standards are warranted, in addition to the current 24-hour average standards.⁸⁶ EPA asks whether a short-term standard would identify periods of high opacity that are not identified using a 24-hour opacity average limit.⁸⁷

EPA did not propose a short-term opacity limit, due to the volume of data that EPA received and the level of effort needed to establish an achievable, statistically defensible short-term opacity standard. Instead, EPA solicited comment on the subject. The data that EPA received were summarized in the document entitled Preliminary Analysis and Recommendations for Potential Coke Oven Combustion Stack 1-hr Additional Standard Under Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC).⁸⁸

It is unclear on what legal basis EPA could consider revising the existing opacity standards. EPA clearly states that it did not identify any development in practices, processes, or control technologies to achieve further reductions of HAP emissions for the PQBS source category. Therefore, a short-term opacity limit is not supported by any identified development in technology and so cannot be "necessary" under section 112(d)(6).

⁸⁶ 88 FR at 55883.

⁸⁷ *Id.*

⁸⁸ EPA, Preliminary Analysis and Recommendations for Potential Coke Oven Combustion Stack 1-hr Additional Standard Under Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC) (May 1, 2023) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0872>.

The COETF also believes that the current (24-hour average) opacity standards are sufficient because the standards effectively control both PM and HAP metals. Indeed, the entire PQBS source category has been shown to present very low and acceptable risk to public health.

2. EPA Should Not Establish Additional Requirements for Soaking Emissions

Soaking refers to the period in the coking cycle starting when an oven is temporarily isolated from the collecting main duct via a mechanical damper and vented through an open standpipe immediately prior to pushing, and ending when the coke begins to be pushed from the oven. Normally, emissions from the standpipe automatically ignite and are destroyed. However, COE can occur from the open standpipe if the emissions do not automatically ignite. EPA's request for input on soaking emissions appears to focus on the time period "after" pushing (i.e., while waiting for an oven to be charged). The time period after the push and before the oven is charged is typically very short because the oven is immediately put back on the collecting main in preparation for charging and in order to keep the oven hot. Therefore, any emissions during this brief time would be minimal at most.

Subpart CCCCC currently regulates soaking COE from coke ovens using work practice standards. Under 40 CFR § 63.7294, coke facilities must prepare and operate according to a written work practice plan for soaking emissions. The plan must include the following measures and procedures:

- Identifying soaking COE that require corrective actions, such as a procedure for mechanically isolating the ovens from the collecting main;
- Training topside workers to identify when soaking emissions do not ignite automatically and, if not, then manually igniting the standpipe;
- Determining whether COE which are not fully processed in the ovens are leaking into the collecting main and if there is incomplete coking; and
- Determining whether the oven damper needs to be reseated or other equipment needs to be cleaned.

As with opacity standards for combustion stacks, EPA has not identified any developments in soaking-related practices, processes, or control technologies. Therefore, there is no apparent legal basis for a revision to the current soaking standards.

Additionally, the COETF has provided comments previously to EPA on soaking emissions, including addressing the characterization of COE, the definition of COE and the relationship of COE to benzene-soluble organics (BSO) and other pollutants.⁸⁹ Although AP-42 emission factors are available to quantify soaking emissions,⁹⁰ the emission factor (quality) rating is the lowest ("E"), reflecting the historical difficulty in quantifying these emissions.

Quantifying and characterizing these emissions are exceedingly difficult because of the following:

- Inherent differences in coke battery design and configuration with respect to collecting mains, offtakes, oven sizes, etc.;
- Variability in coke oven gas underfire demand (thereby impacting volume of fuel gas and directly affecting coke cycle time and sequencing);
- Seasonal impacts from wet and cold ambient conditions;
- Plant-specific coke production operating practices; and
- Variability in the composition of coal used to charge the ovens.

Due to the uncertainty in quantifying COE associated with soaking, it is likewise infeasible to implement conventional air pollution controls (APCs) for soaking. The obstacles for installing APCs for soaking include design and configuration for adequate capture at the offtakes where physical space is generally not available due to moving equipment for charging, pushing, and other fundamental topside operations.

Indeed, the prevention and mitigation of soaking emissions are already adequately addressed by § 63.7294 with required work practices. There is substantial difficulty in quantifying and characterizing soaking emissions due to the complexity of the cokemaking process, offtake equipment, and other variables. Given the intermittent occurrence and short duration of soaking emissions, it would not be reasonable to

⁸⁹ Email from A.C. Dittenhoefer, Montrose, on behalf of the COETF to D.L. Jones, EPA OAQPS, Technical Documentation on Buoyancy Parameters and BLP Plume Heights (Nov. 30, 2020) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0570>.

⁹⁰ AP-42 Section 12.2, Table 12.2-18 presents emissions factors for soaking for PM_{total}, SO₂, NO_x, VOC, and CO.

perform further characterization or quantification of soaking emissions or to develop additional requirements for control of these emissions.

8. COMMENTS ON OTHER ASPECTS OF THE PROPOSED RULE

1. EPA Should More Thoroughly Consider Establishing Work Practices for Malfunction Periods

EPA proposes to eliminate the startup, shutdown, and malfunction (SSM) provisions so that emission standards would apply even during these periods. However, with such a change, a major malfunction could result in a violation of the emission standards. EPA should evaluate the need for a work practice standard that would allow coke facility owners/operators to address major malfunctions following a site-specific plan, in lieu of normal emission standards, because the available information does not justify treating major malfunctions the same as normal operating periods.

When EPA promulgated the existing Subpart L and Subpart CCCCC standards, it did not account for increased emissions occurring during malfunctions when setting the MACT floor limits. EPA should not reverse its previous determination that treating malfunction periods separately is appropriate. In *U.S. Sugar Corp. v. EPA*, 830 F.3d 579 (D.C. Cir. 2016), the D.C. Circuit merely held that EPA is not compelled to account for emissions that occur during malfunctions when setting section 112(d) standards.⁹¹ After *U.S. Sugar Corp.* and *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), EPA still has discretion to account for emissions that occur during malfunctions and set separate work practice standards where (1) sufficient information is available, and (2) the circumstances indicate that treating malfunction periods the same as normal operating periods would not be appropriate.

Facilities can experience major malfunctions that impact compliance if emissions during the malfunction are treated like emissions during normal operating periods. A major malfunction generally occurs if there is a mechanical breakdown or loss of power that leads to the shutdown of operating or control equipment. Emissions during such periods may increase until it is possible to complete repairs safely and restart the equipment.

In any malfunction work practice standard, EPA should provide coke facilities with the option either to meet the requirements applicable to normal operating periods, or to meet the work practice requirements for malfunction periods. If a facility chooses to meet the requirements applicable to malfunction periods, then the work practice

⁹¹ See 830 F.3d at 606-608.

standard could require that the facility create and follow a malfunction work plan with site-specific operating conditions, unless doing so would not be possible due to safety considerations.

2. EPA Should Provide Additional Compliance Time for All Final Standards

For the reasons set forth earlier in these comments, EPA should not finalize the proposed MACT floor standards for PEC and combustion stacks. If EPA nevertheless decides to proceed with any of these limits, it should re-propose the MACT floor standards based upon average emissions limitations at apply to the sources, rather than using emissions performance.

In addition, if EPA proceeds with any new MACT floor standards, the COETF requests that EPA set a 3-year compliance date for all the newly promulgated standards. EPA currently proposes a 1-year compliance date for the new MACT limits, while a 3-year compliance date is allowed for the beyond-the-floor emission limits for HNR waste heat stacks. A 3-year compliance schedule is also necessary for any new PEC or combustion stack standards in order to allow affected facilities the time needed to evaluate the need for additional emission controls and to assess feasibility and technical risks, design, engineer, procure and install the new equipment before compliance is required. Retrofitting new equipment into a facility with already limited space available for the new equipment can require complex mechanical designs that are especially time-consuming. This schedule would also allow facilities to streamline and consolidate their compliance testing of these sources, which EPA is requiring every 5 years – a frequency that the COETF supports.

3. DCOT Cameras Are Not a Proven Technology for Fugitive Emissions

To the COETF's knowledge, Method Alt-082 has not been used successfully to accurately quantify and timely address fugitive opacity emissions. The only mandatory use of Method Alt-082 was imposed in the Ferroalloys Production source category. However, after encountering numerous issues with the technology and the vendor, EPA approved Method 9 readings as an "alternative" method for Ferroalloys sources.

Currently, the Ferroalloy industry is still relying on Method 9 and is not using Alt-082. As described in its request to use Method 9, Eramet explained that Method Alt-082 was not reliable or accurate for measuring fugitive emissions from the Ferroalloy Production source category. In its response to Eramet, EPA agreed that "[t]he sole vendor no longer offers [an ASTM compliant system off the shelf]; "[t]he DCOT

software provided by the sole vendor is not yet fully developed for use;” and “[t]he costs of implementing [the method] are unpredictable.”⁹²

None of those factors have changed, and they are equally applicable and relevant to the Coke Oven and PQBS source categories. Unless and until the accuracy and reliability of Method Alt-082 are demonstrated for fugitive emissions, together with an ability quickly to respond to the results of Method Alt-082 readings, EPA should not require or approve its use.

4. EPA Should Make Specific Revisions to the Proposed Regulatory Language

Due to the inadequate comment period, the COETF has completed only a cursory review of the redlined rule language memos for both Subpart L and Subpart CCCCC. Comments on EPA’s proposed redlines follow below. Note that the COETF’s proposed revisions focus on topics not addressed earlier in these comments and do not reflect wholesale revisions that EPA should make, such as removing the proposed fenceline rule language, reversing proposed changes to existing limits, and removing the new proposed MACT floor limits.

If new standards for battery combustion stacks are finalized, the proposed test specifications for battery stacks at § 63.7320(a)(2) should include PM because there is a PM emissions standard proposed for battery stacks at § 63.7296(c)-(f). They should not include total PAHs because there is not a total PAH emissions standard proposed for battery stacks at § 63.7296(c)-(f). Revisions are shown below.

(2) §63.7296(c)-(f) for emissions of <u>PM</u> , Hg, total AG, <u>and</u> HCN, and total PAH from a battery stack that applies to you within 180 calendar days after the compliance date that is specified in §63.7283.
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The proposed testing methodologies listed at § 63.7322(b)(1)(v) should include not only EPA Method 5 and approved alternatives, but also EPA Method 5B (Nonsulfuric Acid Particulate Matter), which is an approved alternative in applicable Title V permit

⁹² Letter from L. Guillot, Eramet Marietta Inc., to S. Pruitt, EPA, Request for Approval of Alternative to Test Method (Apr. 28, 2017); and letter from S. Johnson, EPA, to L. Guillot, Eramet Marietta, Inc. (June 8, 2017) (Att. 16). See also, M. McFarland, *et al.* (2007), Fugitive Emissions Opacity Determination Using the Digital Opacity Compliance System (DOCS), Journal of the Air & Waste Management Association, 57:11, 1317-1325 <http://dx.doi.org/10.3155/1047-3289.57.11.1317> (Att. 17).

terms. Also, EPA should clarify the term “front half” to mean “filterable” particulate matter for consistency throughout the rule text. Example revisions are shown below:

(v) Method 5, 5B or 5D, as applicable, to determine the concentration of filterable (front half) PM in the stack gas.

At § 63.7322(b)-(f), the term “*T*” for equations 1, 2, 3, and 4 in subpart 4 of each subsection is ambiguous and confusing. The term “*T*” must represent the total active “sampling run time” as defined in EPA Method 5 for the equations to yield the correct results. The terminology in the rule language could be improperly misconstrued to mean total test run duration which would lead to incorrect test results. Total test run duration can be much greater than the total sampling run time for intermittent processes such as pushing operations where the capture system fan and control device engage only during each push and do not engage between pushes. Therefore, EPA should clarify the language describing this term to mean explicitly the (total) “sampling run time” as defined in EPA Method 5. Ideally and to avoid any ambiguity, EPA should also replace the letter “*T*” for this term with the Greek capital letter theta (“ Θ ”), using the same nomenclature as used in Method 5 and eliminating any ambiguity as to the correct value to be used in the equations. At minimum, EPA should clarify the term’s description to mean “sampling run time” as defined in EPA Method 5. For example, at § 63.7322(b)(4), see below:

(4) Compute the process-weighted mass emissions ($E_{p,PM}$) for each test run using Equation 1 of this section as follows:

$$E_{p,PM} = \frac{C_{PM} \times Q \times T\theta}{P \times K} \text{ (Eq. 1)}$$

Where:

$E_{p,PM}$ = Process weighted mass emissions of particulate matter, lb/ton;

C_{PM} = Concentration of particulate matter, gr/dscf;

Q = Volumetric flow rate of stack gas, dscf/hr;

$T\theta$ = Total “sampling run time” (as defined in Method 5 nomenclature at 12.1) during a run that a sample is actively withdrawn from the stack during pushing, hr;

P = Total amount of coke pushed during the test run, tons; and

K = Conversion factor, 7,000 gr/lb.

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Further, there appears to be an editorial anomaly in this term's definitions at § 63.7322(c)(4), § 63.7322(d)(4) and § 63.7322(e)(4), making these definitions unclear and inconsistent with the definitions for the same term at § 63.7322(b)(4) and § 63.7322(f)(4). For example, see below:

~~T_Q~~ = Total "sampling run time" (as defined in Method 5 nomenclature at 12.1) during a run that a sample is actively withdrawn from the stack, ~~for capture systems and control devices applied to pushing emissions, total time during a run that a sample is withdrawn from the stack~~ during pushing, hr;

At § 63.7322(d)(1)(ii), EPA specifies "Method 26/26A" among the acceptable test methods for determining total acid gases emissions. Method 26 and Method 26A are different test methods employing different types of sampling equipment components that are not compatible with each other – the latter requires isokinetic sampling, while the former does not. To avoid ambiguity regarding acceptable test methods, this section should be edited as shown below and similarly at § 63.7322(d)(2).

(ii) Methods ~~26/~~26A or 320, to determine the concentration of total acid gases in the stack gas. The voluntary consensus standard ASTM D6348-12e1, "Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy" (incorporated by reference, see §63.14) is an acceptable alternative to Method 320 at this time with caveats requiring inclusion of selected annexes to the standard as mandatory. When using ASTM D6348-12e1, the following conditions must be met:

At § 63.7322(e)(1)(ii), EPA should add as an acceptable test method Other Test Method 29 (OTM-29) "*Sampling and Analysis for Hydrogen Cyanide Emissions from Stationary Sources.*" Tests conducted in 2016 for 2 of the 4 Pushing MACT floor units (CC Middletown OH and SC Middletown OH) and 2 of the 4 Battery Stack MACT floor units (CC Middletown OH and USS Clairton PA), upon which EPA relied for establishing the proposed HCN emissions standard, used OTM-29 for determining hydrogen cyanide emissions. The other 2 units in each of the MACT floors (CC Burns Harbor IN and CC Monessen PA in both the Pushing and Battery Stack MACT floors) used Method 320. Further, tests of the pushing unit at SC Middletown OH used a modified version of OTM-29 in which the 6.0N sodium hydroxide solution specified in OTM-29 was replaced with 10% zinc acetate solution

to avoid interference from carbon dioxide in the gas sample.⁹³ Consequently, EPA should revise the listing of acceptable test methods for determining HCN emissions at § 63.7322(e)(1)(ii) as shown below.

(ii) Methods Other Test Method 29 (OTM-29) or 320, to determine the concentration of hydrogen cyanide in the stack gas. The voluntary consensus standard ASTM D6348-12e1, “Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy” (incorporated by reference, see §63.14) is an acceptable alternative to Method 320 at this time with caveats requiring inclusion of selected annexes to the standard as mandatory. When using ASTM D6348-12e1, the following conditions must be met:

If EPA does not specify OTM-29 in the Rule because it has not yet been promulgated as a test method under Part 63, then EPA should propose OTM-29 as a new test method under Part 63 in a timely manner such that the final test method can be simultaneously promulgated with the final rule. If there are significant modifications to OTM-29 before the final test method is promulgated, or EPA is otherwise unable to complete the final test method before the Proposed Rule is finalized, EPA should (1) withdraw the proposed HCN standard until such time as new tests can be conducted for the pushing units at CC Middletown OH and SC Middletown OH and the battery stacks at CC Middletown OH and USS Clairton PA using either the final version of the new test method or Method 320, (2) recalculate the upper prediction limits including all 4 facilities in the Pushing and Battery Stack MACT floors and the new test data, and (3) propose a new HCN standard with ample time for public comment before promulgating a final rule.

At § 63.7322(f)(1), EPA should clarify which specific PAH compounds comprise “total PAH” to clarify and avoid ambiguity regarding the 17 specific PAH compounds EPA has proposed at § 63.7290(e). This could be accomplished by citing in § 63.7322(f)(1) the list of 17 PAH compounds at the footnote in § 63.7290(e). See revision shown below:

(1) Determine the concentration of total PAH, the sum of seventeen PAH compounds listed at §63.7290(e), according to the following test methods in appendix A to 40 CFR part 60.

⁹³ AECOM, Test Report for ICR Testing at Suncoke Energy, Inc. Facilities, Rev. 1, Section 5.7, page 5-5 (Nov. 2017) <https://www.regulations.gov/document/EPA-HQ-OAR-2002-0085-0494>.

9. CONCLUSION

For the reasons set forth in these comments, the COETF respectfully requests that EPA revise the Proposed Rule as discussed in these comments and publish a supplemental notice of proposed rulemaking with a complete statement of basis and purpose for the revised proposal, and with a reasonable public comment period of not less than 30 days.

The COETF appreciates EPA's careful consideration of these comments, and we look forward to working with EPA as continues to advance this rulemaking.