ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2002–0085, EPA–HQ–OAR–2003–0051; FRL–8471–01–OAR]

RIN 2060–AV19

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

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing amendments to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Coke Ovens: Pushing, Quenching, and Battery Stacks (PQBS) source category, and the NESHAP for the Coke Oven Batteries (COB) source category. This proposal presents the results of the residual risk and technology review (RTR) conducted as required under the Clean Air Act (CAA) for the PQBS source category, and the periodic technology review for the COB source category, also required under the CAA. The EPA is proposing that risks due to emissions of hazardous air pollutants (HAP) from the PQBS source category are acceptable and that the current NESHAP provides an ample margin of safety to protect public health. Under the technology review for PQBS NESHAP, we are proposing there are no developments in practices, processes or control technologies that necessitate revision of standards for this source category. Under the technology review for the COB source category, the EPA is proposing amendments to the NESHAP to lower the limits for leaks from doors, lids, and offtakes to reflect improvements in technology to minimize emissions. We also are proposing a requirement for fenceline monitoring for benzene (as a surrogate for coke oven emissions) and a requirement to conduct root cause analysis and corrective action upon exceeding an action level. In addition, we are proposing: (1) new standards for several unregulated HAP or sources of HAP at facilities subject to PQBS NESHAP; (2) the removal of exemptions for periods of startup, shutdown, and malfunction consistent with a 2008 court decision, and clarifying that the standards apply at all times for both source categories; and (3) the addition of electronic reporting for performance test results and compliance reports. We solicit comments on all aspects of this proposed action.

DATES:

Comments. Comments must be received on or before October 2, 2023. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or before September 15, 2023.

Public hearing: If anyone contacts us requesting a public hearing on or before August 21, 2023, we will hold a virtual public hearing. See **SUPPLEMENTARY INFORMATION** for information on requesting and registering for a public hearing.

ADDRESSES: You may send comments, identified by Docket ID Nos. EPA–HQ–OAR–2002–0085 (Coke Ovens: Pushing, Quenching, and Battery Stacks source category) and EPA–HQ–OAR–2003–0051 (Coke Oven Batteries source category) by any of the following methods:

- *Federal eRulemaking Portal: https://www.regulations.gov/* (our preferred method). Follow the online instructions for submitting comments.
- *Email: a-and-r-docket@epa.gov.* Include Docket ID Nos. EPA–HQ–OAR–2002–0085 or EPA–HQ–OAR–2003–0051 in the subject line of the message.
- *Fax:* (202) 566–9744. Attention Docket ID Nos. EPA–HQ–OAR–2002–0085 or EPA–HQ–OAR–2003–0051.
- *Mail:* U.S. Environmental Protection Agency, EPA Docket Center, Docket ID Nos. EPA–HQ–OAR–2002–0085 or EPA–HQ–OAR–2003–0051, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- *Hand/Courier Delivery:* EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. The Docket Center's hours of operation are 8:30 a.m.–4:30 p.m., Monday–Friday (except federal holidays).

Instructions: All submissions received must include the Docket ID Nos. for this rulemaking. Comments received may be posted without change to *https://www.regulations.gov/,* including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Donna Lee Jones, Sector Policies and Programs Division (MD–243–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–5251; email address: *jones.donnalee@epa.gov.* For specific information regarding the risk modeling methodology, contact Michael Moeller, Health and Environmental Impacts Division (C539–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2766; email address: *moeller.michael@epa.gov.*

SUPPLEMENTARY INFORMATION:

Participation in virtual public hearing. To request a virtual public hearing, contact the public hearing team at (888) 372–8699 or by email at *SPPDpublichearing@epa.gov.* If requested, the hearing will be held via virtual platform on August 31, 2023. The hearing will convene at 11:00 a.m. Eastern Time (ET) and will conclude at 3:00 p.m. ET. The EPA may close a session 15 minutes after the last pre-registered speaker has testified if there are no additional speakers. The EPA will announce further details at *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission or https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air.*

If a public hearing is requested, the EPA will begin pre-registering speakers for the hearing no later than 1 business day after a request has been received. To register to speak at the virtual hearing, please use the online registration form available at *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission or https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air,* or contact the public hearing team at (888) 372–8699 or by email at *SPPDpublichearing@epa.gov.* The last day to pre-register to speak at the hearing will be August 28, 2023. Prior to the hearing, the EPA will post a general agenda that will list pre-registered speakers in approximate order at: *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission, or https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air.*

The EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearings to run either ahead of schedule or behind schedule.

Each commenter will have 4 minutes to provide oral testimony. The EPA encourages commenters to provide the EPA with a copy of their oral testimony electronically (via email) by emailing it to *jones.donnalee@epa.gov.* The EPA also recommends submitting the text of your oral testimony as written comments to the rulemaking docket.

The EPA may ask clarifying questions during the oral presentations but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral testimony and supporting information presented at the public hearing.

Please note that any updates made to any aspect of the hearing will be posted online at *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission, or https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air.* While the EPA expects the hearing to go forward as set forth above, please monitor our website or contact the public hearing team at (888) 372–8699 or by email at *SPPDpublichearing@epa.gov* to determine if there are any updates. The EPA does not intend to publish a document in the **Federal Register** announcing updates.

If you require the services of a translator or special accommodation such as audio description, please pre-register for the hearing with the public hearing team and describe your needs by August 23, 2023. The EPA may not be able to arrange accommodations without advanced notice.

Docket. The EPA has established dockets for this rulemaking under Docket ID Nos. EPA–HQ–OAR–2002–0085 (Coke Ovens: Pushing, Quenching, and Battery Stacks source category) and EPA–HQ–OAR–2003–0051 (Coke Oven Batteries source category). All documents in the dockets are listed in *https://www.regulations.gov/.* Although listed, some information is not publicly available, *e.g.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy. With the exception of such material, publicly available docket materials are available electronically in *Regulations.gov*.

Instructions. Direct your comments to Docket ID Nos. EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *https://www.regulations.gov/,* including any personal information provided, unless the comment includes information claimed to be CBI or other information whose disclosure is restricted by statute. Do not submit electronically to *https://www.regulations.gov/* any information that you consider to be CBI or other information whose disclosure is restricted by statute. This type of information should be submitted as discussed below.

The EPA may publish any comment received to its public docket. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa-dockets.*

The *https://www.regulations.gov/* website allows you to submit your comment anonymously, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through *https://www.regulations.gov/,* your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any digital storage media you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters or any form of encryption and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at *https://www.epa.gov/dockets.*

Submitting CBI. Do not submit information containing CBI to the EPA through *https://www.regulations.gov/.* Clearly mark the part or all of the information that you claim to be CBI. For CBI information on any digital storage media that you mail to the EPA, note the docket ID, mark the outside of the digital storage media as CBI, and identify electronically within the digital storage media the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not contain the information claimed as CBI directly to the public docket through the procedures outlined in *Instructions* above. If you submit any digital storage media that does not contain CBI, mark the outside of the digital storage media clearly that it does not contain CBI and note the docket ID. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2.

Our preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol (FTP), or other online file sharing services (*e.g.,* Dropbox, OneDrive, Google Drive). Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address *oaqpscbi@epa.gov,* and as described above, should include clear CBI markings and note the docket ID. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email *oaqpscbi@epa.gov* to request a file transfer link. If sending CBI information through the postal service, please send it to the following address: OAQPS Document Control Officer (C404–02), OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention Docket ID No's EPA–HQ–OAR–2002–0085 or EPA–HQ–OAR–2003–0051. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

Preamble acronyms and abbreviations. Throughout this preamble the use of ''we,'' ''us,'' or ''our'' is intended to refer to the EPA. We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

1–BP 1-bromopropane
ACI activated carbon injection
AEGL acute exposure guideline level
AERMOD air dispersion model used by the HEM model
B/W Bypass/Waste
BTF beyond-the-floor
ByP by-product recovery coke production process
CAA Clean Air Act
CalEPA California EPA
CBI confidential business information
CBRP coke by-product chemical recovery plant
CFR Code of Federal Regulations
COE coke oven emissions
delta c lowest concentration subtracted from the highest concentration
EPA Environmental Protection Agency
ERPG emergency response planning guideline
ERT electronic reporting tool
FGD flue gas desulfurization
gr/dscf grains per dry standard cubic feet
HAP hazardous air pollutant(s)
HCl hydrochloric acid
HCN hydrogen cyanide
HEM human exposure model
HF hydrogen fluoride
HI hazard index
HNR heat and nonrecovery, or only nonrecovery, no heat
HQ hazard quotient
HRSG heat recovery steam generator
IBR incorporation by reference
IRIS integrated risk information system
km kilometer
LAER lowest achievable emissions rate
lb/ton pounds per ton
MACT maximum achievable control technology
mg/L milligrams per liter
mg/m^3 milligrams per cubic meter
MIR maximum individual risk
NAAQS national ambient air quality standards
NAICS North American Industry Classification System
NESHAP national emission standards for hazardous air pollutants
NTTAA National Technology Transfer and Advancement Act
OAQPS Office of Air Quality Planning and Standards
OMB Office of Management and Budget
PAH polycyclic aromatic hydrocarbons
PB–HAP hazardous air pollutants known to be persistent and bio-accumulative in the environment
PM particulate matter
POM polycyclic organic matter
ppm parts per million
RDL representative detection limit
REL reference exposure level
RFA Regulatory Flexibility Act
RfC reference concentration
RfD reference dose
RTR residual risk and technology review
SAB Science Advisory Board
SO_2 sulfur dioxide
SSM startup, shutdown, and malfunction
TBD to be determined
TOSHI target organ-specific hazard index
tpy tons per year
TRIM.FaTE total risk integrated methodology.fate, transport, and ecological exposure model
UF uncertainty factor
UPL upper prediction limit
μg/m^3 microgram per cubic meter
UMRA Unfunded Mandates Reform Act
URE unit risk estimate
VCS voluntary consensus standards
VE visible emissions
WAS wet alkaline scrubber

Organization of this document. The information in this preamble is organized as follows:

I. General Information

A. Executive Summary

1. Purpose of the Regulatory Action

The EPA is proposing amendments to the NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks and the NESHAP for Coke Oven Batteries. The purpose of this proposed action is to fulfill the EPA's statutory obligations pursuant to Clean Air Act (CAA) sections 112(d)(2), (d)(3) and (d)(6) and improve the emissions standards for the Coke Oven Batteries and Coke Ovens Pushing, Quenching, and Battery Stacks source categories based on information regarding developments in practices, processes, and control technologies (''technology review''). In addition, this action fulfills the EPA's statutory obligations pursuant to CAA section 112(f)(2) to evaluate the maximum achievable control technology (MACT) standards for the Coke Ovens Pushing, Quenching, and Battery Stacks source category to determine whether additional standards are needed to address any remaining risk associated with HAP emissions from this Coke Ovens Pushing, Quenching, and Battery Stacks source category (''residual risk review'').

2. Summary of the Major Provisions of This Regulatory Action

The EPA is proposing amendments under the technology review for the Coke Oven Batteries NESHAP pursuant to CAA section 112(d)(6), including: (1) revising the emission leak limits for coke oven doors, lids, and offtakes; and (2) requiring fenceline monitoring for benzene along with an action level for benzene (as a surrogate for coke oven emissions (COE)) and a requirement for root cause analysis and corrective actions if the action level is exceeded.

Under the technology review for the Coke Ovens Pushing, Quenching, and Battery Stacks NESHAP pursuant to CAA section 112(d)(6), the EPA did not identify any cost-effective options to reduce actual emissions from currently regulated sources under the Coke Ovens Pushing, Quenching, and Battery Stacks NESHAP. However, EPA is asking for comment on whether a 1-hour opacity standard would identify short-term periods of high opacity that are not identified from the current 24-hour standard of 15 percent opacity; and on whether COE are emitted from ovens after being pushed and while they are waiting to be charged again (*i.e.,* ''soaking emissions'').

As part of the technology review, the EPA must also set MACT standards for previously unregulated HAP emissions pursuant to CAA sections 112(d)(2) and (3). The EPA identified 17 unregulated HAP or emissions sources from Coke Ovens Pushing, Quenching, and Battery Stacks sources including hydrogen chloride (HCl), hydrogen fluoride (HF), mercury (Hg), and PM metals (*e.g.,* lead and arsenic) from heat nonrecovery (HNR) facility heat recovery steam generators (HRSG) main stacks and bypass/waste (B/W) stacks, and HCl, HF, hydrogen cyanide (HCN), Hg, and PM metals from pushing and coke oven battery stacks. In this action, under the authority of CAA sections 112(d)(2) and (3), we are proposing MACT floor limits (*i.e.,* the minimum stringency level allowed by the CAA) for 15 of the 17 unregulated HAP and beyond the floor limits (*i.e.,* more stringent than the MACT floor) for two HAP (mercury and nonmercury HAP metals) from B/W stacks.

With regard to the residual risk review for the Coke Pushing, Quenching, and Battery Stacks NESHAP pursuant to CAA section 112(f)(2), the estimated inhalation maximum individual risk (MIR) for cancer for the baseline scenario (*i.e.,* current actual emissions levels) due to HAP emissions from Coke Ovens Pushing, Quenching, and Battery Stacks sources is 9-in-1 million, and the MIR based on allowable emissions was only slightly higher (10-in-1 million), as shown in Table 1. Furthermore, all estimated noncancer risks are below a level of concern. Based on these risk results and subsequent evaluation of potential controls (*e.g.,* costs, feasibility and impacts) that could be applied to reduce these risks even further, we are proposing that risks due to HAP emissions from the Coke Ovens Pushing, Quenching, and Battery Stacks source category are acceptable and the Coke Ovens Pushing, Quenching, and Battery Stacks NESHAP provides an ample margin of safety to protect public health. Therefore, we are not proposing amendments under CAA section 112(f)(2); however, we note that the proposed BTF MACT limit for B/W stacks would reduce the estimated MIR from 9-in-1 million to 2-in-1 million, and the population estimated to be exposed to cancer risks greater than or equal to 1-in-1 million would be reduced from approximately 2,900 to 390. However, the whole facility cancer MIR (the maximum cancer risk posed by all sources of HAP at coke oven facilities) would remain unchanged, at 50-in-1 million because the whole facility MIR is driven by the estimated actual current fugitive emissions from coke oven doors (as described in section IV.B. of this preamble) and we do not expect reductions of the actual emissions from doors as a result of this proposed rule (as explained further in section IV.D. of this preamble).

TABLE 1—SUMMARY OF ESTIMATED CANCER RISK REDUCTIONS

Item	Inhalation cancer risk	Population cancer risk	
	MIR in 1 million	Estimated annual cancer incidence (cases per year)	≥ 1-in-1 million
Coke Ovens Pushing, Quenching, and Battery Stacks Source Category	9	0.02	2,900
Post Control Risks for the Coke Ovens Pushing, Quenching, and Battery Stacks Source Category	2	[a] 0.02	390
Whole Facility	50	0.2	2.7M
Post Control Whole Facility Risks	50	0.2	2.7M

[a] The estimated incidence of cancer due to inhalation exposures is 0.02 excess cancer case per year (or 1 case every 50 years) and stays approximately the same due to emission reductions as a result of this proposed action.

Furthermore, we conducted a demographics analysis, which indicates that the population within 10 km of the coke oven facilities with risks greater than or equal to 1-in-1 million is disproportionately African American.

With regard to other actions, we are proposing the removal of exemptions for periods of startup, shutdown, and malfunction consistent with a 2008 court decision, *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008), and clarifying that the emissions standards apply at all times; and the addition of electronic reporting for performance test results and compliance reports for both NESHAPs.

With regard to costs and emissions reductions, we estimate that the proposed BTF limits for B/W stacks will achieve an estimated 237 tons per year (tpy) reduction of PM emissions, 14 tpy of $PM_{2.5}$ emissions, 4.0 tpy reduction of nonmercury metal HAP emissions, and 144 pounds per year reduction of mercury emissions. The total capital costs for the industry (for 1 facility) are estimated to be $7.5M and the estimated annual costs for the industry for all proposed requirements are about $9.1M/yr for 11 affected facilities.

B. Does this action apply to me?

Table 2 of this preamble lists the NESHAP and associated regulated industrial source categories that are the subjects of this proposal. Table 2 is not intended to be exhaustive, but rather provides a guide for readers regarding the entities that this proposed action is likely to affect. The proposed standards, once promulgated, will be directly applicable to the affected sources. Federal, state, local, and tribal government entities would not be affected by this proposed action. As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (see 57 FR 31576, July 16, 1992) and *Documentation for Developing the Initial Source Category List, Final Report* (*see* EPA–450/3–91–030, July 1992), the Coke Ovens: Pushing, Quenching, and Battery Stacks source category includes emissions from pushing and quenching operations, and battery stacks at a coke oven facility. The Coke Oven Batteries source category includes emissions from the batteries themselves. A coke oven facility is defined as a facility engaged in the manufacturing of metallurgical coke by the destructive distillation of coal.

TABLE 2—NESHAP AND SOURCE CATEGORIES AFFECTED BY THIS PROPOSED ACTION

Source category	NESHAP	NAICS Code [a]
Coke Ovens: Pushing, Quenching, and Battery Stacks.	40 CFR part 63, subpart CCCCC	331110 Iron and Steel Mills and Ferroalloy Manufacturing.
Coke Oven Batteries	40 CFR part 63, subpart L	324199 All Other Petroleum and Coal Products Manufacturing.

[a] North American Industry Classification System.

C. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this proposed action at *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission* and *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the proposal and key technical documents at these same websites. Information on the overall residual risk and technology review (RTR) program is available at *https://www3.epa.gov/ttn/atw/rrisk/rtrpg.html.*

A memorandum showing the rule edits that would be necessary to incorporate the changes to 40 CFR part 63, subpart CCCCC and 40 CFR part 63, subpart L proposed in this action are available in the dockets (Docket ID Nos. EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051). Following signature by the EPA Administrator, the EPA also will post a copy of this document to *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission* and *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air.*

II. Background

A. What is the statutory authority for this action?

The statutory authority for this action is provided by sections 112 of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 *et seq.*). Section 112 of the CAA establishes a two-stage regulatory process to develop standards for emissions of hazardous air pollutants (HAP) from stationary sources. Generally, the first stage involves establishing technology-based standards and the second stage involves evaluating those standards that are based on maximum achievable control technology (MACT) to determine whether additional standards are needed to address any remaining risk associated with HAP emissions. This second stage is commonly referred to as the ''residual risk review.'' In addition to the residual risk review, the CAA also requires the EPA to review standards set under CAA section 112 every 8 years and revise the standards as necessary taking into account any ''developments in practices, processes, or control technologies.'' This review is commonly referred to as the ''technology review.'' When the two reviews are combined into a single rulemaking, it is commonly referred to as the ''risk and technology review.'' The discussion that follows identifies the most relevant statutory sections and briefly explains the contours of the methodology used to implement these statutory requirements. A more comprehensive discussion appears in the document titled *CAA Section 112 Risk and Technology Reviews: Statutory Authority and Methodology,* in the docket for this rulemaking.

In the first stage of the CAA section 112 standard setting process, the EPA promulgates technology-based standards under CAA section 112(d) for categories of sources identified as emitting one or more of the HAP listed in CAA section 112(b). Sources of HAP emissions are either major sources or area sources, and CAA section 112 establishes different requirements for major source standards and area source standards. ''Major sources'' are those that emit or have the potential to emit 10 tons per year (tpy) or more of a single HAP or 25 tpy or more of any combination of HAP. All other sources are ''area sources.'' For major sources, CAA section 112(d)(2) provides that the technology-based NESHAP must reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements, and nonair quality health and environmental impacts). These standards are commonly referred to as MACT standards. CAA section 112(d)(3) also establishes a minimum control level for MACT standards, known as the MACT ''floor.'' In certain instances, as provided in CAA section 112(h), the EPA may set work practice standards in lieu of numerical emission standards. Pursuant to CAA sections 112(d)(2) and (3), the EPA must also consider control options that are more stringent than the floor. Standards more stringent than the floor are commonly referred to as beyond-the-floor (BTF) MACT standards. The EPA evaluates whether BTF standards are needed based on emission reductions, costs of control, and other factors. If EPA determines that there are potential BTF standards that might be cost-efffective, the EPA typicallly develops and evaluates those BTF control options. After evaluating the BTF options, the EPA typically proposes such BTF options if EPA determines those BTF options under consideration are technically feasible, costs impacts are reasonable, and that the BTF standard would achieve meaningful reductions and not result in significant non-air impacts such as impacts to other media or excessive energy use. For area sources, CAA section 112(d)(5) gives the EPA discretion to set standards based on generally available control technologies or management practices (GACT standards) in lieu of MACT standards.

The second stage in standard-setting focuses on identifying and addressing any remaining (*i.e.,* ''residual'') risk pursuant to CAA section 112(f). For source categories subject to MACT standards, section 112(f)(2) of the CAA requires the EPA to determine whether promulgation of additional standards is needed to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect. Section 112(d)(5) of the CAA provides that this residual risk review is not required for categories of area sources subject to GACT standards. Section 112(f)(2)(B) of the CAA further expressly preserves the EPA's use of the two-step approach for developing standards to address any residual risk and the Agency's interpretation of ''ample margin of safety'' developed in the *National Emissions Standards for Hazardous Air Pollutants: Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants* (Benzene NESHAP) (54 FR 38044, September 14, 1989). The EPA notified Congress in the Residual Risk Report that the Agency intended to use the Benzene NESHAP approach in making CAA section 112(f) residual risk determinations (EPA–453/R–99–001, p. ES–11). The EPA subsequently adopted this approach in its residual risk determinations and the United States Court of Appeals for the District of Columbia Circuit upheld the EPA's interpretation that CAA section 112(f)(2) incorporates the approach established in the Benzene NESHAP. See *NRDC* v. *EPA,* 529 F.3d 1077, 1083 (D.C. Cir. 2008).

The approach incorporated into the CAA and used by the EPA to evaluate residual risk and to develop standards under CAA section 112(f)(2) is a two-step approach. In the first step, the EPA determines whether risks are acceptable. This determination ''considers all health information, including risk estimation uncertainty, and includes a presumptive limit on maximum individual lifetime [cancer] risk (MIR) [1] of approximately 1 in 10 thousand.'' (54 FR 38045). If risks are unacceptable, the EPA must determine the emissions standards necessary to reduce risk to an acceptable level without considering costs. In the second step of the approach, the EPA considers whether the emissions standards provide an ample margin of safety to protect public health ''in consideration of all health information, including the number of persons at risk levels higher than approximately 1 in 1 million, as well as other relevant factors, including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision.'' *Id.* The EPA must promulgate emission standards necessary to provide an ample margin of safety to protect public health or determine that the standards being reviewed provide an ample margin of safety without any revisions. After conducting the ample margin of safety analysis, we consider whether a more stringent standard is necessary to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.

CAA section 112(d)(6) separately requires the EPA to review standards promulgated under CAA section 112 and revise them ''as necessary (taking into account developments in practices, processes, and control technologies)'' no less often than every 8 years. In conducting this review, which we call the ''technology review,'' the EPA is not required to recalculate the MACT floors that were established during earlier rulemakings. *Natural Resources Defense Council (NRDC)* v. *EPA,* 529 F.3d 1077, 1084 (D.C. Cir. 2008). *Association of Battery Recyclers, Inc.* v. *EPA,* 716 F.3d 667 (D.C. Cir. 2013). The EPA may consider cost in deciding whether to revise the standards pursuant to CAA section 112(d)(6). The EPA is required to address regulatory gaps, such as missing MACT standards for listed air toxics known to be emitted from the source category. *Louisiana Environmental Action Network (LEAN)* v. *EPA,* 955 F.3d 1088 (D.C. Cir. 2020).

B. What are the source categories and how do the current NESHAPs regulate HAP emissions?

Coke oven facilities produce metallurgical coke from coal in coke ovens. Coke ovens are chambers of brick or other heat-resistant material in which coal is heated to separate the coal gas, coal water, and tar to produce coke. In a coke oven, coal undergoes destructive distillation to produce coke, which is almost entirely carbon. A coke oven ''battery'' is a group of ovens connected by common walls. There are two types of metallurgic coke: (1) furnace coke, which is primarily used in integrated iron and steel furnaces, along with iron ore pellets (known as Taconite pellets) and other materials, to produce iron and steel; and (2) foundry coke, which is primarily used in foundry furnaces for melting iron to produce iron castings.

The process begins when a batch of coal is discharged from the coal bunker into a larry car (*i.e.,* charging vehicle that moves along the top of the battery). The larry car is positioned over the empty, hot oven; the lids on the charging ports are removed; and the coal is discharged from the hoppers of the larry car into the oven. The coal is heated in the oven in the absence of air to temperatures approaching 2,000 degrees Fahrenheit (°F) which drives off most of the volatile organic constituents of the coal as gases and vapors, forming coke which consists almost entirely of carbon. Coking continues for 15 to 18 hours to produce blast furnace coke and 25 to 30 hours to produce foundry coke.

At the end of the coking cycle, doors at both ends of the oven are removed, and the incandescent coke is pushed out of the oven by a ram that is extended from the pusher machine. The coke is pushed through a coke guide into a special rail car, called a quench car, which transports the coke to a quench tower, typically located at the end of a row of batteries. Inside the quench tower, the hot coke is deluged with water so that it will not continue to burn after being exposed to air. The quenched coke is discharged onto an inclined ''coke wharf'' to allow excess water to drain and to cool the coke.

This process takes place at two types of facilities: (1) by-product recovery (ByP) facilities, where chemical by-products are recovered from coke oven emissions (COE) in a co-located coke by-product chemical recovery plant (CBRP); or (2) heat and nonrecovery, or only nonrecovery with no heat recovery (HNR) facilities, where chemicals are not recovered but heat may be recovered from the exhaust from coke ovens in a heat recovery steam generator (HRSG).

The coke production process described above is similar at both types of facilities, except that at by-product facilities the ovens are under positive pressure and the organic gases and vapors that evolve are removed through an offtake system and sent to a CBRP for chemical recovery and coke oven gas cleaning. The CBRPs are not part of the Coke Ovens: Pushing, Quenching, and Battery Stacks source category or the Coke Oven Batteries source category. The CBRPs comprise a separate source category that is regulated under the 40 CFR part 61, subpart L NESHAP, which was promulgated in 1989.

At the HNR facilities and the only nonrecovery with no heat recovery facilities, as the names imply, the coke production process does not recover the chemical by-products. Instead, all of the coke oven gas is burned and the hot exhaust gases can be recovered for the cogeneration of electricity. Furthermore, the non-recovery ovens are of a horizontal design (as opposed to the vertical design used in the by-product process). Ovens at HNR facilities are typically 30 to 45 feet long, 6 to 12 feet wide, and 5 to 12 feet high. Typically, the individual ovens at ByP facilities are 36 to 56 feet long, 1 to 2 feet wide, and 8 to 20 feet high, and each oven holds 15 to 25 tons of coal. Ovens at ByP facilities operate under positive pressure and, consequently, leak COE, a HAP, that includes both gases and particulate matter (PM), via oven door jams (''doors''), charging port lids (''lids''), offtake ducts (''offtakes''), and during charging. Ovens at HNR facilities

[1] Although defined as ''maximum individual risk,'' MIR refers only to cancer risk. MIR, one metric for assessing cancer risk, is the estimated risk if an individual were exposed to the maximum level of a pollutant for a lifetime.

are designed to operate under negative pressure to reduce or eliminate leaks but require maintenance and monitoring to ensure constant operation at negative pressure.

There are 14 coke facilities in the United States (U.S.). Nine of these facilities use the ByP process and five use the HNR process, as listed in Table 3. Of these 14 facilities, 11 are currently operating, with six ByP process facilities and five HNR facilities. Of the five HNR facilities, four have HRSGs and one does not. The one facility without HRSGs sends COE directly to the atmosphere via waste heat stacks, 24 hours per day, 7 days per week. At the current heat recovery facilities, each HRSG can be bypassed ranging from 192 to 1,139 hours per year, depending on the facilities' permits, sending COE directly into the atmosphere.

TABLE 3—COKE OVEN FACILITIES

Firm name	Parent company	City	State	Coke process	Currently operating
ABC Coke	Drummond Co.	Tarrant	AL	ByP	Yes.
Bluestone	Bluestone	Birmingham	AL	ByP	No.
Cleveland-Cliffs	Cleveland-Cliffs	Middletown	OH	ByP	No.
Cleveland-Cliffs	Cleveland-Cliffs	Follansbee	WV	ByP	No.
Cleveland-Cliffs	Cleveland-Cliffs	Burns Harbor	IN	ByP	Yes.
Cleveland-Cliffs	Cleveland-Cliffs	Monessen	PA	ByP	Yes.
Cleveland-Cliffs	Cleveland-Cliffs	Warren	OH	ByP	Yes.
EES Coke Battery	DTE Vantage	Detroit	MI	ByP	Yes.
Indiana Harbor Coke	SunCoke Energy	East Chicago	IN	HNR	Yes.
Haverhill Coke	SunCoke Energy	Franklin Furnace	OH	HNR	Yes.
Gateway Coke	SunCoke Energy	Granite City	IL	HNR	Yes.
Middletown Coke	SunCoke Energy	Middletown	OH	HNR	Yes.
Jewell Coke	SunCoke Energy	Vansant	VA	HNR	Yes.
US Steel Clairton	United States Steel	Clairton	PA	ByP	Yes.

The Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP regulates both ByP and HNR facilities. Emissions occur during the pushing process, where coke oven doors are opened at both ends of the coke oven and a pusher machine positioned next to the ovens pushes the incandescent coke from the oven's coke end (or coke side of the battery) using a ram that is extended from the coal or push end of the oven (or push side of the battery) to the coke end, where coke then leaves the oven. Particulate emissions that escape from open ovens during pushing are collected by particulate control devices such as baghouses, cyclones, and scrubbers that remove metal HAP in the form of PM. The Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP includes limits for PM emissions (as a surrogate for nonmercury metal HAPs) from the pushing control device, ranging from 0.01 to 0.04 pounds per ton (lb/ton), depending on whether the control device is mobile or stationary, and whether the battery is tall or short, according to the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP definitions.[2] Opacity (which also is a surrogate for nonmercury metal HAPs) during pushing is limited by the NESHAP to 30 or 35 percent, depending on whether the battery is short or tall, respectively.

The incandescent coke pushed from the ovens is received by rail quench cars that travel to the nearby quench tower. In the quenching process, several thousand gallons of water are sprayed from multiple ports within the quench tower onto the coke mass to cool it. The quench towers have baffles along the inside walls to condense any steam and coke aerosols, which then fall down the inside of the tower and exit as wastewater. The Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP requires that baffles limit the quench towers to 5 percent open space and that the dissolved solids in the quench water are no greater than 1,100 milligrams per liter (mg/L). The Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP also requires the use of clean quench water.

The battery stack that collects the underfire hot gases, which surround the oven and do not contact the coke or coke gas, into the oven flues and discharges to the atmosphere is limited to 15 percent opacity during normal operation, as a daily average, and to 20 percent opacity during extended coking, as a daily average, which is the period when the coke ovens are operated at a lower temperature to slow down the coke-making process.

The HAP emissions from HRSG main stacks and COE from bypass/waste heat stacks are not currently regulated by any NESHAP and, therefore, we are proposing to revise the NESHAP for the Coke Ovens: Pushing, Quenching, and Battery Stacks source category to add standards for these emission points. The exhaust from HRSGs currently is controlled by flue gas desulfurization (FGD) units and baghouses for removal of sulfur dioxide (SO_2) and PM, respectively. The control of PM also reduces HAP (nonmercury metal) emissions from the baghouse exhaust.

The Coke Oven Batteries source category addresses emissions from both ByP and HNR facilities. At HNR facilities, the NESHAP addresses emissions from charging and emissions from doors (offtake and lids leaks also are addressed but only ''if applicable to the new nonrecovery coke oven battery,'' which they are not). The HNR facilities are required to have 0 emissions from leaking doors on the coke oven battery (and 0 emissions from leaking lids to ovens and offtake systems, if any). Door leaks include emissions from coke oven doors when they are closed and the oven is in operation. Charging at HNR facilities involves opening one of the two doors on an oven and loading coal into the oven using a ''pushing/charging machine.'' Because coal is charged on the ''coal side'' of a HNR battery, there are no ports with ''lids'' on top of HNR ovens for charging coal as there are on ByP ovens. The Coke Oven Battery NESHAP (40 CFR part 63, subpart L), promulgated in 1993, set emission limits (via limiting the number of seconds of visible emissions (VE)) from doors, lids, and offtakes at HNR and any new ByP facilities to 0 percent leaking.

For HNR facilities operating before 2004, the 1993 Coke Oven Batteries NESHAP required good operating and

[2] Tall battery in the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP means a ByP coke oven battery with ovens 16.5 feet (five meters) or more in height; short battery means a ByP coke oven battery with ovens less than 16.5 feet (five meters) in height. Note the two rules (40 CFR part 63, subparts CCCCC and L) differ in their designation of tall ovens (5 meters for subpart 5C and 6 meters for Coke Oven Batteries NESHAP).

maintenance practices to minimize emissions during charging. This requirement for charging affects only SunCoke's Vansant (Virginia) facility, which is a nonrecovery coke facility and does not recover heat. For HNR facilities operating after 2004, which includes the other four HNR facilities (that are heat recovery) and any future HNR facilities, the NESHAP regulates charging via PM and opacity limits, and requires a PM control device and work practices for minimizing VE during charging.

For ByP facilities, the Coke Oven Batteries NESHAP regulates emissions occurring during the charging of coal into the ovens and from leaking of oven doors, leaking topside charging port lids, and leaking offtake ducts. The charging process for ByP facilities includes opening the lids on the charging ports on the top of the ovens and discharging of coal from hoppers of a car that positions itself over the oven port and drops coal into the oven. The Coke Oven Batteries NESHAP limits the number of seconds of visible emissions during a charge at ByP facilities, as determined by measurements made according to EPA Method 303.

The emissions from leaks at ByP batteries are regulated under the Coke Oven Batteries NESHAP by limits on the percent of doors, lids and offtakes that leak COE. Doors are located on both sides of the ovens. The offtake system at ByP facilities includes ascension pipes and collector main offtake ducts that are located on the top of the coke oven and battery. The Coke Oven Batteries NESHAP established limits for the percent of leaking doors, lids, and offtakes for the current ByP coke facilities that are shown in Table 4 and are based on the regulatory ''track'' of the facilities. The facilities were required by the CAA section 112(i)(8) to choose either the MACT track or the lowest achievable emissions rate (LAER) track by 1993 (58 FR 57898). Only one of the nine ByP coke oven facilities remains as a MACT track facility today (Cleveland Cliffs, Middletown, OH). The remaining eight existing ByP facilities are on the LAER track.

TABLE 4—LIMITS FOR EXISTING BYP FACILITIES UNDER THE COKE OVEN BATTERIES NESHAP

Emission source	Limits by track [a] and effective date		
	MACT	LAER	
	July 14, 2005 [b] (residual risk)	January 2010	Residual Risk
Percent leaking lids	0.4	0.4	TBD [c].
Percent leaking offtakes	2.5	2.5	TBD.
Charging (log [d]) s/charge [e]	12	12	TBD.
Percent leaking doors—Tall [f]	4.0	4.0	TBD.
Percent leaking doors—All other [g]	3.3	3.3	TBD.
Percent leaking doors—Foundry [h]	3.3	4.0	TBD.

[a] The tracks were established in the 1993 NESHAP for Coke Oven Batteries in a tiered approach (58 FR 57898).
[b] Established in the 2005 RTR final rule for Coke Oven Batteries (70 FR 19992). Only applies to one current ByP facility, which is idle.
[c] TBD = to be determined, as specified in section 171 of the CAA.
[d] Log = the logarithmic average of the observations of multiple charges (as opposed to an arithmetic average).
[e] s/charge = seconds of visible emissions per charge of coal into the oven.
[f] Tall = doors 20 feet (six meters) or more in height (Coke Oven Batteries).
[g] All other = all blast furnace coke oven doors that are not tall, *i.e.,* doors less than 20 feet (six meters).
[h] Foundry = doors on ovens producing foundry coke. Two of the 14 coke oven facilities, both LAER track, produce foundry coke exclusively.

One HNR facility is on the LAER track (SunCoke's Vansant facility in Virginia) and the other four HNR facilities are under the MACT track. Any future coke facilities of any type (HNR or ByP) would be under the MACT track,[3] but no additional ByP facilities are expected in the future due to the requirement for 0 percent leaking doors, lids, and offtakes (as determined by EPA Method 303) for new facilities under the Coke Oven Batteries NESHAP. The positive pressure operation of ByP ovens makes it impossible to achieve 0 leaks with the current ByP coke oven technology.

C. What data collection activities were conducted to support this action?

The EPA sent two CAA section 114 information requests to industry in 2016 and 2022 (CAA section 114 request). The CAA section 114 request in 2016 was sent to nine parent coke companies, which included a facility questionnaire and source testing request, and resulted in information gathered for 11 facilities of which seven were requested to perform testing. After testing was conducted and data were submitted, the EPA was notified that one of the CAA section 114 request facilities (Erie Coke) was shut down in late 2019.

The 2016 CAA section 114 request questionnaire was composed of ten parts: owner information, general facility information, regulatory information, process flow diagrams and plot plans, emission points, process and emission unit operations, air pollution control and monitoring equipment, economics/costs, startup and shutdown procedures, and management practices. The compilation of the facility responses can be found in the dockets to this proposed rulemaking (EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051).

Through the 2016 CAA section 114 request, source test data were obtained for HAP and PM emissions at the following coke stack sources: pushing, ByP battery combustion stacks, ByP boiler stacks, HRSG main stacks, HRSG bypass/waste heat stacks, HNR charging control device outlets, and quench towers for a total of 18 units among the seven facilities that performed testing. In addition, results of daily and monthly EPA Method 303 leak tests were obtained for ByP charging, lids, doors, and offtakes. The EPA sent each facility its compiled testing results for review, and corrections, if needed, and incorporated the facilities' comments and revisions into the final results. The final compilation of 2016 source testing results can be found in the docket to this action (EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051).

The CAA section 114 request in 2022 was sent to six parent companies, which included a facility questionnaire and source testing request, and resulted in information gathered for eight facilities. In the 2022 CAA section 114 request, the 2016 CAA section 114 request questionnaire was resent to six facilities that already had received the CAA

[3] *See* CAA section 112(i)(8)(D).

section 114 request in 2016 to update if needed and then also sent to two facilities for the first time. The 2022 CAA section 114 request also included additional questionnaire sections for work practices that prevent leaks at ByP facilities; EPA Method 303 leak data for coke oven doors, lids, offtakes, and charging at ByP coke oven facilities; coke ByP battery stack opacity data and work practices that prevent stack limit exceedances; information concerning miscellaneous sources, such as emergency battery flares; community issues; and paperwork reduction act estimates. The compilation of the facility responses can be found in the dockets to this proposed rulemaking (EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051).

Through the 2022 CAA section 114 request, source test data were obtained for volatile and particulate HAP and COE at the following coke point sources: HRSG main stacks and HRSG bypass/waste heat stacks. In addition, data and information were obtained for HAP from: the CBRP cooling towers, light oil condensers, sulfur recovery/desulfurization units, and flares; EPA Method 303 door leaks from the bench and yard; and fugitive emissions monitoring at the fenceline and interior on site locations. The fenceline monitoring requirements and results are described in much more detail in section IV.D.5. of this preamble. The CAA section 114 requests sent by EPA and compilation of source testing results can be found in the docket to this action (EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051).

The 2016 and 2022 CAA section 114 request responses and other data for emissions for coke facilities were used to populate the risk assessment modeling input files and included all source testing results and relevant questionnaire responses on facility operations (*e.g.,* stack parameters, stack locations) as well as estimates for sources not currently operating.

D. What other relevant background information and data were available?

1. Noncategory Emissions

The 2017 National Emission Inventory (NEI)/Emission Inventory System (EIS) data were used to estimate some emissions for the noncategory sources at coke facilities, such as CBRPs, excess coke oven gas flares, and other miscellaneous units not related to coke manufacturing (*e.g.,* process heaters, metal finishing, steel pickling, annealing furnaces, reheat furnaces, thermal coal dryers, etc.). Other emissions, such as number of leaking doors, lids, and offtakes and emissions from charging, which are regulated under Coke Oven Batteries NESHAP, were obtained from CAA section 114 request responses obtained in 2016 and 2022.

2. Emissions From CBRP

The emissions from operations at the CBRP are sources of HAP at ByP facilities, which are regulated by the Benzene NESHAP for Coke By-Product Recovery Plants in 40 CFR part 61. We intend 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). We request additional information on the individual HAP emitted, the process units that are the source(s) of the HAP emissions, and the estimated amount of HAP emissions, if known, by these CBRP activities. Once 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. Details on the currently available estimates of CBRP emissions are located in the document: *Coke Ovens Risk and Technology Review: Data Summary,*[4] hereafter referred to as the ''Data Memorandum,'' available in the docket for this proposed rulemaking.

III. Analytical Procedures and Decision-Making

In this section, we describe the analyses performed to support the proposed decisions for the RTR and other issues addressed in this proposal.

A. How do we consider risk in our decision-making?

As discussed in section II.A. of this preamble and in the Benzene NESHAP, in evaluating and developing standards under CAA section 112(f)(2), we apply a two-step approach to determine whether or not risks are acceptable and to determine if the standards provide an ample margin of safety to protect public health. As explained in the Benzene NESHAP, ''the first step judgment on acceptability cannot be reduced to any single factor'' and, thus, ''[t]he Administrator believes that the acceptability of risk under [CAA] section 112 is best judged on the basis of a broad set of health risk measures and information.'' (54 FR 38046). Similarly, with regard to the ample margin of safety determination, ''the Agency again considers all of the health risk and other health information considered in the first step. Beyond that information, additional factors relating to the appropriate level of control will also be considered, including cost and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors.'' *Id.*

The Benzene NESHAP approach provides flexibility regarding factors the EPA may consider in making determinations and how the EPA may weigh those factors for each source category. The EPA conducts a risk assessment that provides estimates of the MIR posed by emissions of HAP that are carcinogens from each source in the source category, the hazard index (HI) for chronic exposures to HAP with the potential to cause noncancer health effects, and the hazard quotient (HQ) for acute exposures to HAP with the potential to cause noncancer health effects.[5] The assessment also provides estimates of the distribution of cancer risk within the exposed populations, cancer incidence, and an evaluation of the potential for an adverse environmental effect. The scope of the EPA's risk analysis is consistent with the explanation in EPA's response to comments on our policy under the Benzene NESHAP. That policy, chosen by the Administrator, permits the EPA to consider multiple measures of health risk. Not only can the MIR be considered, but also cancer incidence, the presence of noncancer health effects, and uncertainties of the risk estimates. This allows the effect on the most exposed individuals to be reviewed as well as the impact on the general public. The various factors can then be weighed in each individual case. This approach complies with the *Vinyl Chloride* mandate that the Administrator determine an acceptable level of risk to the public by employing his or her expertise to assess available data. It also complies with Congressional intent behind the CAA, which did not exclude use of any particular measure of public health risk from the EPA's consideration with respect to CAA section 112 regulations, and thereby implicitly permits consideration of any and all measures of health risk which the Administrator, in his or her judgment,

[4] *Coke Ovens Risk and Technology Review, Data Summary.* D.L. Jones, U.S. Environmental Protection Agency and G.E. Raymond, RTI International. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. May 1, 2023. Docket ID Nos. EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051.

[5] The MIR is defined as the cancer risk associated with a lifetime of exposure at the highest concentration of HAP where people are likely to live. The HQ is the ratio of the potential HAP exposure concentration to the noncancer dose-response value; the HI is the sum of HQs for HAP that affect the same target organ or organ system.

believes are appropriate to determining what will ''protect the public health. (54 FR 38057). Thus, the level of the MIR is only one factor to be weighed in determining acceptability of risk. The Benzene NESHAP explained that ''an MIR of approximately one in 10 thousand should ordinarily be the upper end of the range of acceptability. As risks increase above this benchmark, they become presumptively less acceptable under CAA section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability. Or, the Agency may find, in a particular case, that a risk that includes an MIR less than the presumptively acceptable level is unacceptable in the light of other health risk factors.'' *Id.* at 38045. In other words, risks that include an MIR above 100-in-1 million may be determined to be acceptable, and risks with an MIR below that level may be determined to be unacceptable, depending on all of the available health information. Similarly, with regard to the ample margin of safety analysis, the EPA stated in the Benzene NESHAP that: ''EPA believes the relative weight of the many factors that can be considered in selecting an ample margin of safety can only be determined for each specific source category. This occurs mainly because technological and economic factors (along with the health-related factors) vary from source category to source category.'' *Id.* at 38061. We also consider the uncertainties associated with the various risk analyses, as discussed earlier in this preamble, in our determinations of acceptability and ample margin of safety.

The EPA notes that it has not considered certain health information to date in making residual risk determinations. At this time, we do not attempt to quantify the HAP risk that may be associated with emissions from other facilities that do not include the source categories under review, mobile source emissions, natural source emissions, persistent environmental pollution, or atmospheric transformation in the vicinity of the sources in the categories.

The EPA understands the potential importance of considering an individual's total exposure to HAP in addition to considering exposure to HAP emissions from the source category and facility. We recognize that such consideration may be particularly important when assessing noncancer risk, where pollutant-specific exposure health reference levels (*e.g.,* reference concentrations (RfCs)) are based on the assumption that thresholds exist for adverse health effects. For example, the EPA recognizes that, although exposures attributable to emissions from a source category or facility alone may not indicate the potential for increased risk of adverse noncancer health effects in a population, the exposures resulting from emissions from the facility in combination with emissions from all of the other sources (*e.g.,* other facilities) to which an individual is exposed may be sufficient to result in an increased risk of adverse noncancer health effects. In May 2010, the Science Advisory Board (SAB) advised the EPA ''that RTR assessments will be most useful to decision makers and communities if results are presented in the broader context of aggregate and cumulative risks, including background concentrations and contributions from other sources in the area.'' [6]

In response to the SAB recommendations, the EPA incorporates cumulative risk analyses into its RTR risk assessments. The Agency (1) conducts facility-wide assessments, which include source category emission points, as well as other emission points within the facilities; (2) combines exposures from multiple sources in the same category that could affect the same individuals; and (3) for some persistent and bioaccumulative pollutants, analyzes the ingestion route of exposure. In addition, the RTR risk assessments consider aggregate cancer risk from all carcinogens and aggregated noncancer HQs for all noncarcinogens affecting the same target organ or target organ system.

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.

B. How do we perform the technology review?

Our technology review primarily focuses on the identification and evaluation of developments in practices, processes, and control technologies that have occurred since the MACT standards were promulgated. Where we identify such developments, we analyze their technical feasibility, estimated costs, energy implications, and nonair environmental impacts. We also consider the emission reductions associated with applying each development. This analysis informs our decision of whether it is ''necessary'' to revise the emissions standards. In addition, we consider the appropriateness of applying controls to new sources versus retrofitting existing sources. For this exercise, we consider 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).

In addition to reviewing the practices, processes, and control technologies that were considered at the time we originally developed or last updated the NESHAP, we review a variety of data sources in our investigation of potential practices, processes, or controls. We also review the NESHAP and the available data to determine if there are any unregulated emissions of HAP within the source categories and evaluate this data for use in developing new emission standards. See sections II.C. and II.D. of this preamble for information on the specific data sources that were reviewed as part of the technology review.

C. How do we estimate post-MACT risk posed by the coke ovens: pushing, quenching, and battery stacks source category?

In this section, we provide a complete description of the types of analyses that we generally perform during the risk assessment process. In some cases, we do not perform a specific analysis because it is not relevant. For example, in the absence of emissions of HAP known to be persistent and

[6] Recommendations of the SAB Risk and Technology Review Methods Panel are provided in their report, which is available at: *https://www.epa.gov/sites/default/files/2021-02/documents/epa-sab-10-007-unsigned.pdf.*

bioaccumulative in the environment (PB–HAP), we would not perform a multipathway exposure assessment. Where we do not perform an analysis, we state that we do not and provide the reason. While we present all of our risk assessment methods, we only present risk assessment results for the analyses actually conducted (see section IV.B. of this preamble).

The EPA conducts a risk assessment that provides estimates of the MIR for cancer posed by the HAP emissions from each source in the source category, the HI for chronic exposures to HAP with the potential to cause noncancer health effects, and the HQ for acute exposures to HAP with the potential to cause noncancer health effects. The assessment also provides estimates of the distribution of cancer risk within the exposed populations, cancer incidence, and an evaluation of the potential for an adverse environmental effect. The eight sections that follow this paragraph describe how we estimated emissions and conducted the risk assessment. The docket for this rulemaking contains the following document which provides more information on the risk assessment inputs and models: *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule.*[7] The methods used to assess risk (as described in the eight primary steps below) are consistent with those described by the EPA in the document reviewed by a panel of the EPA's SAB in 2009;[8] and described in the SAB review report issued in 2010. They are also consistent with the key recommendations contained in that report.

1. How did we estimate actual emissions and identify the emissions release characteristics?

The Coke Ovens: Pushing, Quenching, and Battery Stacks source category emits HAP from pushing of coke out of ovens, ByP battery (combustion) stacks, HNR HRSG control device main stacks, and quench towers; and volatile and particulate COE from HNR HRSG bypass/waste heat stacks. Emissions estimates and release characteristics for HAP and COE from the above affected sources at current coke facilities were derived from stack test data obtained through the 2016 and 2022 CAA section 114 requests. The derivation of actual emissions estimates and release characteristics for the emission points are described in the Data Memoradum,[4] which is available in the docket for this proposed rulemaking.

The affected sources of the Coke Oven Battery NESHAP include COE leaks from oven doors, charging port lids, and offtakes; charging control device HAP emissions; and visible fugitive emissions from charging. Emissions estimates for leaks were derived from EPA Method 303 data submitted as part of the CAA section 114 requests (with estimates for door leak emissions derived using an equation described in section IV.D.6. of this preamble). Emissions estimates and release characteristics for HAP from charging control devices were derived from stack test data obtained through the CAA section 114 requests. The derivation of all actual emissions estimates and release characteristics for sources subject to the Coke Oven Battery NESHAP are discussed in more detail in the Data Memorandum,[4] available in the docket for this proposed rulemaking.

2. How did we estimate MACT-allowable emissions?

The available emissions data in the RTR emissions dataset include estimates of the mass of HAP emitted during a specified annual time period. These ''actual'' emission levels are often lower than the emission levels allowed under the requirements of the current MACT standards. The emissions allowed under the MACT standards are referred to as the ''MACT-allowable'' emissions. We discussed the consideration of both MACT-allowable and actual emissions in the final Coke Oven Batteries RTR (70 FR 19992, 19998–19999, April 15, 2005) and in the proposed and final Hazardous Organic NESHAP RTR (71 FR 34421, 34428, June 14, 2006, and 71 FR 76603, 76609, December 21, 2006, respectively). In those actions, we noted that assessing the risk at the MACT-allowable level is inherently reasonable since that risk reflects the maximum level facilities could emit and still comply with national emission standards. We also explained that it is reasonable to consider actual emissions, where such data are available, in both steps of the risk analysis, in accordance with the Benzene NESHAP approach. (54 FR 38044.)

For pushing, the PM limits in the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP were used along with measured HAP and PM data from the 2016 CAA section 114 request for pushing operations to estimate allowable HAP emissions. The ratio of allowable PM based on the standards to actual PM was multiplied by HAP emissions measured in the 2016 CAA section 114 request to estimate allowable HAP emissions. For battery stacks, the ratio of the opacity limits to opacity data from the 2016 CAA section 114 request was used with HAP test data from battery stacks from the 2016 CAA section 114 request to develop allowable HAP emissions for battery stacks. The ratios of the quench tower water limit for total dissolved solids (TDS) to water TDS test data from the 2016 CAA section 114 request were used along with test data for HAP air emissions from the 2016 CAA section 114 request for the quench tower to estimate allowable HAP air emissions from the quench tower. For HAP from HRSG main control device stacks and COE from HRSG bypass/waste heat stacks, allowable emissions were set equal to actual emissions, developed from 2016 and 2022 CAA section 114 test request data because the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP currently does not have emission limits for these sources.

For sources subject to the Coke Oven Batteries NESHAP, the limits for COE from doors, lids, offtakes, and charging were used with 2016 and 2022 CAA section 114 request operating data to estimate allowable emissions from these emission points.

Further details regarding the development of allowable emissions estimates using data from source test reports and other parts of the 2016 and 2022 CAA section 114 request responses are provided in the Data Memorandum[4] available in the docket for this proposed rulemaking.

3. How do we conduct dispersion modeling, determine inhalation exposures, and estimate individual and population inhalation risk?

Both long-term and short-term inhalation exposure concentrations and health risk from the source category addressed in this proposal were estimated using the Human Exposure Model (HEM).[9] The HEM performs three primary risk assessment activities: (1) conducting dispersion modeling to estimate the concentrations of HAP in ambient air, (2) estimating long-term and short-term inhalation exposures to

[7] *Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule.* M. Moeller. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. May 1, 2023. Docket ID No. EPA–HQ–OAR–2002–0085).

[8] *U.S. EPA. Risk and Technology Review (RTR) Risk Assessment Methodologies: For Review by the EPA's Science Advisory Board with Case Studies—MACT I Petroleum Refining Sources and Portland Cement Manufacturing.* EPA–452/R–09–006. June 2009. *https://www3.epa.gov/airtoxics/rrisk/rtrpg.html.*

[9] For more information about HEM, go to *https://www.epa.gov/fera/risk-assessment-and-modeling-human-exposure-model-hem.*

individuals residing within 50 kilometers (km) of the modeled sources, and (3) estimating individual and population-level inhalation risk using the exposure estimates and quantitative dose-response information.

a. Dispersion Modeling

The air dispersion model AERMOD, used by the HEM model, is one of the EPA's preferred models for assessing air pollutant concentrations from industrial facilities.[10] To perform the dispersion modeling and to develop the preliminary risk estimates, HEM draws on three data libraries. The first is a library of meteorological data, which is used for dispersion calculations. This library includes 1 year (2019) of hourly surface and upper air observations from 838 meteorological stations selected to provide coverage of the United States and Puerto Rico. A second library of United States Census Bureau census block[11] internal point locations and populations provides the basis of human exposure calculations (U.S. Census, 2010). In addition, for each census block, the census library includes the elevation and controlling hill height, which are also used in dispersion calculations. A third library of pollutant-specific dose-response values is used to estimate health risk. These are discussed below.

b. Risk From Chronic Exposure to HAP

In developing the risk assessment for chronic exposures, we use the estimated annual average ambient air concentrations of each HAP emitted by each source in the source category. The HAP air concentrations at each nearby census block centroid located within 50 km of the facility are a surrogate for the chronic inhalation exposure concentration for all the people who reside in that census block. A distance of 50 km is consistent with the limitations of Gaussian dispersion models, including AERMOD.

For each facility, we calculate the MIR as the cancer risk associated with a continuous lifetime (24 hours per day, 7 days per week, 52 weeks per year, 70 years) exposure to the maximum concentration at the centroid of each inhabited census block. We calculate individual cancer risk by multiplying the estimated lifetime exposure to the ambient concentration of each HAP (in micrograms per cubic meter (μg/m^3) by its unit risk estimate (URE). The URE is an upper-bound estimate of an individual's incremental risk of contracting cancer over a lifetime of exposure to a concentration of 1 microgram of the pollutant per cubic meter of air. For residual risk assessments, we generally use UREs from the EPA's Integrated Risk Information System (IRIS). For carcinogenic pollutants without IRIS values, we look to other reputable sources of cancer dose-response values, often using California EPA (CalEPA) UREs, where available. In cases where new, scientifically credible dose-response values have been developed in a manner consistent with EPA guidelines and have undergone a peer review process similar to that used by the EPA, we may use such dose-response values in place of, or in addition to, other values, if appropriate. The pollutant-specific dose-response values used to estimate health risk are available at *https://www.epa.gov/fera/dose-response-assessment-assessing-health-risks-associated-exposure-hazardous-air-pollutants.*

To estimate individual lifetime cancer risks associated with exposure to HAP emissions from each facility in the source category, we sum the risks for each of the carcinogenic HAP[12] emitted by the modeled facility. We estimate cancer risk at every census block within 50 km of every facility in the source category. The MIR is the highest individual lifetime cancer risk estimated for any of those census blocks. In addition to calculating the MIR, we estimate the distribution of individual cancer risks for the source category by summing the number of individuals within 50 km of the sources whose estimated risk falls within a specified risk range. We also estimate annual cancer incidence by multiplying the estimated lifetime cancer risk at each census block by the number of people residing in that block, summing results for all of the census blocks, and then dividing this result by a 70-year lifetime.

To assess the risk of noncancer health effects from chronic exposure to HAP, we calculate either an HQ or a target organ-specific hazard index (TOSHI). We calculate an HQ when a single noncancer HAP is emitted. Where more than one noncancer HAP is emitted, we sum the HQ for each of the HAP that affects a common target organ or target organ system to obtain a TOSHI. The HQ is the estimated exposure divided by the chronic noncancer dose-response value, which is a value selected from one of several sources. The preferred chronic noncancer dose-response value is the EPA RfC, defined as ''an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime'' (*https://iaspub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&vocabName=IRIS%20Glossary*). In cases where an RfC from the EPA's IRIS is not available or where the EPA determines that using a value other than the RfC is appropriate, the chronic noncancer dose-response value can be a value from the following prioritized sources, which define their dose-response values similarly to the EPA: (1) the Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Level (*https://www.atsdr.cdc.gov/mrls/index.asp*); (2) the CalEPA Chronic Reference Exposure Level (REL) (*https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0*); or (3) as noted above, a scientifically credible dose-response value that has been developed in a manner consistent with the EPA guidelines and has undergone a peer review process similar to that

[10] U.S. EPA. Revision to the *Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions* (70 FR 68218, November 9, 2005).

[11] A census block is the smallest geographic area for which census statistics are tabulated.

[12] The EPA's 2005 *Guidelines for Carcinogen Risk Assessment* classifies carcinogens as: ''carcinogenic to humans,'' ''likely to be carcinogenic to humans,'' and ''suggestive evidence of carcinogenic potential.'' These classifications also coincide with the terms ''known carcinogen, probable carcinogen, and possible carcinogen,'' respectively, which are the terms advocated in the EPA's *Guidelines for Carcinogen Risk Assessment,* published in 1986 (51 FR 33992, September 24, 1986). In August 2000, the document, *Supplemental Guidance for Conducting Health Risk Assessment of Chemical Mixtures* (EPA/630/R–00/002), was published as a supplement to the 1986 document. Copies of both documents can be obtained from *https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=20533&CFID=70315376&CFTOKEN=71597944.* Summing the risk of these individual compounds to obtain the cumulative cancer risk is an approach that was recommended by the EPA's SAB in their 2002 peer review of the EPA's National Air Toxics Assessment (NATA) titled *NATA—Evaluating the National-scale Air Toxics Assessment 1996 Data—an SAB Advisory,* available at *https://nepis.epa.gov/Exe/ZyNET.exe/P100JOEY.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000033%5CP100JOEY.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL.*

used by the EPA. The pollutant-specific dose-response values used to estimate health risks are available at *https://www.epa.gov/fera/dose-response-assessment-assessing-health-risks-associated-exposure-hazardous-air-pollutants.*

c. Risk From Acute Exposure to HAP That May Cause Health Effects Other Than Cancer

For each HAP for which appropriate acute inhalation dose-response values are available, the EPA also assesses the potential health risks due to acute exposure. For these assessments, the EPA makes conservative assumptions about emission rates, meteorology, and exposure location. As part of our efforts to continually improve our methodologies to evaluate the risks that HAP emitted from categories of industrial sources pose to human health and the environment,[13] we revised our treatment of meteorological data to use reasonable worst-case air dispersion conditions in our acute risk screening assessments instead of worst-case air dispersion conditions. This revised treatment of meteorological data and the supporting rationale are described in more detail in *Residual Risk Assessment for Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule* and in Appendix 5 of the report: *Technical Support Document for Acute Risk Screening Assessment.* This revised approach has been used in this proposed rule and in all other RTR rulemakings proposed on or after June 3, 2019.

To assess the potential acute risk to the maximally exposed individual, we use the peak hourly emission rate for each emission point,[14] reasonable worst-case air dispersion conditions (*i.e.,* 99th percentile), and the point of highest off-site exposure. Specifically, we assume that peak emissions from the source category and reasonable worst-case air dispersion conditions co-occur and that a person is present at the point of maximum exposure.

To characterize the potential health risks associated with estimated acute inhalation exposures to a HAP, we generally use multiple acute dose-response values, including acute RELs, acute exposure guideline levels (AEGLs), and emergency response planning guidelines (ERPG) for 1-hour exposure durations, if available, to calculate acute HQs. The acute HQ is calculated by dividing the estimated acute exposure concentration by the acute dose-response value. For each HAP for which acute dose-response values are available, the EPA calculates acute HQs.

An acute REL is defined as ''the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration.''[15] Acute RELs are based on the most sensitive, relevant, adverse health effect reported in the peer-reviewed medical and toxicological literature. They are designed to protect the most sensitive individuals in the population through the inclusion of margins of safety. Because margins of safety are incorporated to address data gaps and uncertainties, exceeding the REL does not automatically indicate an adverse health impact. AEGLs represent threshold exposure limits for the general public and are applicable to emergency exposures ranging from 10 minutes to 8 hours.[16] They are guideline levels for ''once-in-a-lifetime, short-term exposures to airborne concentrations of acutely toxic, high-priority chemicals.'' *Id.* at 21. The AEGL–1 is specifically defined as ''the airborne concentration (expressed as ppm (parts per million) or mg/m^3 (milligrams per cubic meter)) of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.'' The document also notes that ''Airborne concentrations below AEGL–1 represent exposure levels that can produce mild and progressively increasing but transient and nondisabling odor, taste, and sensory irritation or certain asymptomatic, nonsensory effects.'' *Id.* AEGL–2 are defined as ''the airborne concentration (expressed as ppm or mg/m^3) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.'' *Id.*

ERPGs are developed, by the American Industrial Hygiene Association (AIHA), for emergency planning and are intended to be health-based guideline concentrations for single exposures to chemicals. The ERPG–1 is the maximum airborne concentration, established by AIHI below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient adverse health effects or without perceiving a clearly defined, objectionable odor. Similarly, the ERPG–2 is the maximum airborne concentration, established by AIHA, below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.

An acute REL for 1-hour exposure durations is typically lower than its corresponding AEGL–1 and ERPG–1. Even though their definitions are slightly different, AEGL–1s are often the same as the corresponding ERPG–1s, and AEGL–2s are often equal to ERPG–2s. The maximum HQs from our acute inhalation screening risk assessment typically result when we use the acute REL for a HAP. In cases where the maximum acute HQ exceeds 1, we also report the HQ based on the next highest acute dose-response value (usually the AEGL–1 and/or the ERPG–1).

For these source categories, a factor of 2 was applied to actual emissions to calculate the acute emissions. 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. An analysis of hourly pushing records at five coke plants showed that the hourly pushing rate

[13] See, *e.g.,* U.S. EPA. *Screening Methodologies to Support Risk and Technology Reviews (RTR): A Case Study Analysis* (Draft Report, May 2017. *https://www3.epa.gov/ttn/atw/rrisk/rtrpg.html*).

[14] In the absence of hourly emission data, we develop estimates of maximum hourly emission rates by multiplying the average actual annual emissions rates by a factor (either a category-specific factor or a default factor of 10) to account for variability. This is documented in *Residual Risk Assessment for Coke Ovens: Pushing, Quenching, and Battery Stacks in Support of the 2023 Risk and Technology Review Proposed Rule* and in Appendix 5 of the report: *Technical Support Document for Acute Risk Screening Assessment.* Both are available in the docket for this rulemaking.

[15] CalEPA issues acute RELs as part of its Air Toxics Hot Spots Program, and the 1-hour and 8-hour values are documented in *Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I, The Determination of Acute Reference Exposure Levels for Airborne Toxicants,* which is available at *https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary.*

[16] National Academy of Sciences, 2001. *Standing Operating Procedures for Developing Acute Exposure Levels for Hazardous Chemicals,* page 2. Available at *https://www.epa.gov/sites/production/files/2015-09/documents/sop_final_standing_operating_procedures_2001.pdf.* Note that the National Advisory Committee for Acute Exposure Guideline Levels for Hazardous Substances ended in October 2011, but the AEGL program continues to operate at the EPA and works with the National Academies to publish final AEGLs (*https://www.epa.gov/aegl*).

does not deviate significantly from the annual average pushing rate, with multipliers ranging from 1.26 to 2.06.[17] Acute levels of HAP emissions from other coke emission sources are thought to mirror the pushing emissions based on a reasonable expectation that those levels would mirror the acute levels estimated for pushing operations; therefore, an acute factor of two was used for all sources at coke facilities. A further discussion of why this factor was chosen can be found in the Data Memorandum,[4] located in the docket for the rule. We request comments on the validity of the assumption of two for an acute factor.

In our acute inhalation screening risk assessment, acute impacts are deemed negligible for HAP for which acute HQs are less than or equal to 1, and no further analysis is performed for these HAP. In cases where an acute HQ from the screening step is greater than 1, we assess the site-specific data to ensure that the acute HQ is at an off-site location.

4. How do we conduct the multipathway exposure and risk screening assessment?

The EPA conducts a tiered screening assessment examining the potential for significant human health risks due to exposures via routes other than inhalation (*i.e.,* ingestion). We first determine whether any sources in the source categories emit any HAP known to be persistent and bioaccumulative in the environment, as identified in the EPA's Air Toxics Risk Assessment Library (see Volume 1, Appendix D, at *https://www.epa.gov/fera/risk-assessment-and-modeling-air-toxics-risk-assessment-reference-library*).

For the Coke Ovens: Pushing, Quenching, and Battery Stacks source category, we identified PB–HAP emissions of arsenic, cadmium, dioxin, lead, mercury and POMs (polycyclic organic matter), so we proceeded to the next step of the evaluation. Except for lead, the human health risk screening assessment for PB–HAP consists of three progressive tiers. In a Tier 1 screening assessment, we determine whether the magnitude of the facility-specific emissions of PB–HAP warrants further evaluation to characterize human health risk through ingestion exposure. To facilitate this step, we evaluate emissions against previously developed screening threshold emission rates for several PB–HAP that are based on a hypothetical upper-end screening exposure scenario developed for use in conjunction with the EPA's Total Risk Integrated Methodology. Fate, Transport, and Ecological Exposure (TRIM.FaTE) model. The PB–HAP with screening threshold emission rates are arsenic compounds, cadmium compounds, chlorinated dibenzodioxins and furans, mercury compounds, and POM. Based on the EPA estimates of toxicity and bioaccumulation potential, these pollutants represent a conservative list for inclusion in multipathway risk assessments for RTR rules. (See Volume 1, Appendix D at *https://www.epa.gov/sites/production/files/2013-08/documents/volume_1_reflibrary.pdf.*) In this assessment, we compare the facility-specific emission rates of these PB–HAP to the screening threshold emission rates for each PB–HAP to assess the potential for significant human health risks via the ingestion pathway. We call this application of the TRIM.FaTE model the Tier 1 screening assessment. The ratio of a facility's actual emission rate to the Tier 1 screening threshold emission rate is a ''screening value.''

We derive the Tier 1 screening threshold emission rates for these PB–HAP (other than lead compounds) to correspond to a maximum excess lifetime cancer risk of 1-in-1 million (*i.e.,* for arsenic compounds, polychlorinated dibenzodioxins and furans, and POM) or, for HAP that cause noncancer health effects (*i.e.,* cadmium compounds and mercury compounds), a maximum HQ of 1. If the emission rate of any one PB–HAP or combination of carcinogenic PB–HAP in the Tier 1 screening assessment exceeds the Tier 1 screening threshold emission rate for any facility (*i.e.,* the screening value is greater than 1), we conduct a second screening assessment, which we call the Tier 2 screening assessment. The Tier 2 screening assessment separates the Tier 1 combined fisher and farmer exposure scenario into fisher, farmer, and gardener scenarios that retain upper-bound ingestion rates.

In the Tier 2 screening assessment, the location of each facility that exceeds a Tier 1 screening threshold emission rate is used to refine the assumptions associated with the Tier 1 fisher and farmer exposure scenarios at that facility. A key assumption in the Tier 1 screening assessment is that a lake and/or farm is located near the facility. As part of the Tier 2 screening assessment, we use a U.S. Geological Survey (USGS) database to identify actual waterbodies within 50 km of each facility and assume the fisher only consumes fish from lakes within that 50 km zone. We also examine the differences between local meteorology near the facility and the meteorology used in the Tier 1 screening assessment. We then adjust the previously-developed Tier 1 screening threshold emission rates for each PB–HAP for each facility based on an understanding of how exposure concentrations estimated for the screening scenario change with the use of local meteorology and the USGS lakes database.

In the Tier 2 farmer scenario, we maintain an assumption that the farm is located within 0.5 km of the facility and that the farmer consumes meat, eggs, dairy, vegetables, and fruit produced near the facility. We may further refine the Tier 2 screening analysis by assessing a gardener scenario to characterize a range of exposures, with the gardener scenario being more plausible in RTR evaluations. Under the gardener scenario, we assume the gardener consumes home-produced eggs, vegetables, and fruit products at the same ingestion rate as the farmer. The Tier 2 screen continues to rely on the high-end food intake assumptions that were applied in Tier 1 for local fish (adult female angler at 99th percentile fish consumption)[18] and locally grown or raised foods (90th percentile consumption of locally grown or raised foods for the farmer and gardener scenarios).[19] If PB–HAP emission rates do not result in a Tier 2 screening value greater than 1, we consider those PB–HAP emissions to pose risks below a level of concern. If the PB–HAP emission rates for a facility exceed the Tier 2 screening threshold emission rates, we may conduct a Tier 3 screening assessment.

There are several analyses that can be included in a Tier 3 screening assessment, depending upon the extent of refinement warranted, including validating that the lakes are fishable, locating residential/garden locations for urban and/or rural settings, considering plume-rise to estimate emissions lost above the mixing layer, and considering hourly effects of meteorology and plume-rise on chemical fate and transport (a time-series analysis). If necessary, the EPA may further refine the screening assessment through a site-specific assessment.

[17] Personal communication (email). A.C. Dittenhoefer, Coke Oven Environmental Task Force (COETF) of the American Coke and Coal Chemicals Institute, with D.L. Jones, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 31, 2020.

[18] Burger, J. 2002. *Daily consumption of wild fish and game: Exposures of high end recreationists. International Journal of Environmental Health Research,* 12:343–354.

[19] U.S. EPA. *Exposure Factors Handbook 2011 Edition (Final).* U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/052F, 2011.

In evaluating the potential multipathway risk from emissions of lead compounds, rather than developing a screening threshold emission rate, we compare maximum estimated chronic inhalation exposure concentrations to the level of the current National Ambient Air Quality Standard (NAAQS) for lead.[20] Values below the level of the primary (health-based) lead NAAQS are considered to have a low potential for multipathway risk.

For further information on the multipathway assessment approach, see the *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule* available in the docket for this action.

5. How do we conduct the environmental risk screening assessment?

a. Adverse Environmental Effect, Environmental HAP, and Ecological Benchmarks

The EPA conducts a screening assessment to examine the potential for an adverse environmental effect as required under section 112(f)(2)(A) of the CAA. Section 112(a)(7) of the CAA defines ''adverse environmental effect'' as ''any significant and widespread adverse effect, which may reasonably be anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas.''

The EPA focuses on eight HAP, which are referred to as ''environmental HAP,'' in its screening assessment: six PB–HAP and two acid gases. The PB–HAP included in the screening assessment are arsenic compounds, cadmium compounds, dioxins/furans, POM, mercury (both inorganic mercury and methyl mercury), and lead compounds. The acid gases included in the screening assessment are hydrochloric acid (HCl) and hydrogen fluoride (HF).

The HAP that persist and bioaccumulate are of particular environmental concern because they accumulate in the soil, sediment, and water. The acid gases, HCl and HF, are included due to their well-documented potential to cause direct damage to terrestrial plants. In the environmental risk screening assessment, we evaluate the following four exposure media: terrestrial soils, surface water bodies (includes water-column and benthic sediments), fish consumed by wildlife, and air. Within these four exposure media, we evaluate nine ecological assessment endpoints, which are defined by the ecological entity and its attributes. For PB–HAP (other than lead), both community-level and population-level endpoints are included. For acid gases, the ecological assessment evaluated is terrestrial plant communities.

An ecological benchmark represents a concentration of HAP that has been linked to a particular environmental effect level. For each environmental HAP, we identified the available ecological benchmarks for each assessment endpoint. We identified, where possible, ecological benchmarks at the following effect levels: probable effect levels, lowest-observed-adverse-effect level, and no-observed-adverse-effect level. In cases where multiple effect levels were available for a particular PB–HAP and assessment endpoint, we use all of the available effect levels to help us to determine whether ecological risks exist and, if so, whether the risks could be considered significant and widespread.

For further information on how the environmental risk screening assessment was conducted, including a discussion of the risk metrics used, how the environmental HAP were identified, and how the ecological benchmarks were selected, see Appendix 9 of the *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule* available in the docket for this action.

b. Environmental Risk Screening Methodology

For the environmental risk screening assessment, the EPA first determined whether any facilities in the Coke Ovens: Pushing, Quenching, and Battery Stacks source category emitted any of the environmental HAP. For the Coke Ovens: Pushing, Quenching, and Battery Stacks source category, we identified emissions of arsenic, cadmium, dioxin, HCl, HF, lead, mercury (methyl mercury and divalent mercury), and POMs. Because one or more of these environmental HAP are emitted by at least one facility in the source category, we proceeded to the second step of the evaluation for the source category.

c. PB–HAP Methodology

The environmental screening assessment includes six PB–HAP, arsenic compounds, cadmium compounds, dioxins/furans, POM, mercury (both inorganic mercury and methyl mercury), and lead compounds. With the exception of lead, the environmental risk screening assessment for PB–HAP consists of three tiers. The first tier of the environmental risk screening assessment uses the same health-protective conceptual model that is used for the Tier 1 human health screening assessment. TRIM.FaTE model simulations were used to back-calculate Tier 1 screening threshold emission rates. The screening threshold emission rates represent the emission rate in tons of pollutant per year that results in media concentrations at the facility that equal the relevant ecological benchmark. To assess emissions from each facility in the category, the reported emission rate for each PB–HAP was compared to the Tier 1 screening threshold emission rate for that PB–HAP for each assessment endpoint and effect level. If emissions from a facility do not exceed the Tier 1 screening threshold emission rate, the facility ''passes'' the screening assessment, and, therefore, is not evaluated further under the screening approach. If emissions from a facility exceed the Tier 1 screening threshold emission rate, we evaluate the facility further in Tier 2.

In Tier 2 of the environmental screening assessment, the screening threshold emission rates are adjusted to account for local meteorology and the actual location of lakes in the vicinity of facilities that did not pass the Tier 1 screening assessment. For soils, we evaluate the average soil concentration for all soil parcels within a 7.5 km-radius for each facility and PB–HAP. For the water, sediment, and fish tissue concentrations, the highest value for each facility for each pollutant is used. If emission concentrations from a facility do not exceed the Tier 2 screening threshold emission rate, the facility ''passes'' the screening assessment and typically is not evaluated further. If emissions from a facility exceed the Tier 2 screening threshold emission rate, we evaluate the facility further in Tier 3.

As in the multipathway human health risk assessment, in Tier 3 of the

[20] In doing so, the EPA notes that the legal standard for a primary NAAQS—that a standard is requisite to protect public health and provide an adequate margin of safety (CAA section 109(b))—differs from the CAA section 112(f) standard (requiring, among other things, that the standard provide an ''ample margin of safety to protect public health''). However, the primary lead NAAQS is a reasonable measure of determining risk acceptability (*i.e.,* the first step of the Benzene NESHAP analysis) since it is designed to protect the most susceptible group in the human population—children, including children living near major lead emitting sources. 73 FR 67002/3; 73 FR 67000/3; 73 FR 67005/1. In addition, applying the level of the primary lead NAAQS at the risk acceptability step is conservative since that primary lead NAAQS reflects an adequate margin of safety.

environmental screening assessment, we examine the suitability of the lakes around the facilities to support life and remove those that are not suitable (*e.g.,* lakes that have been filled in or are industrial ponds), adjust emissions for plume-rise, and conduct hour-by-hour time-series assessments. If these Tier 3 adjustments to the screening threshold emission rates still indicate the potential for an adverse environmental effect (*i.e.,* facility emission rate exceeds the screening threshold emission rate), we may elect to conduct a more refined assessment using more site-specific information. If, after additional refinement, the facility emission rate still exceeds the screening threshold emission rate, the facility may have the potential to cause an adverse environmental effect.

To evaluate the potential for an adverse environmental effect from lead, we compared the average modeled air concentrations (from HEM) of lead around each facility in the source category to the level of the secondary NAAQS for lead. The secondary lead NAAQS is a reasonable means of evaluating environmental risk because it is set to provide substantial protection against adverse welfare effects which can include ''effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.''

d. Acid Gas Environmental Risk Methodology

The environmental screening assessment for acid gases evaluates the potential phytotoxicity and reduced productivity of plants due to chronic exposure to HF and HCl. The environmental risk screening methodology for acid gases is a single-tier screening assessment that compares modeled ambient air concentrations (from AERMOD) to the ecological benchmarks for each acid gas. To identify a potential adverse environmental effect (as defined in section 112(a)(7) of the CAA) from emissions of HF and HCl, we evaluate the following metrics: the size of the modeled area around each facility that exceeds the ecological benchmark for each acid gas, in acres and square kilometers; the percentage of the modeled area around each facility that exceeds the ecological benchmark for each acid gas; and the area-weighted average screening value around each facility (calculated by dividing the area-weighted average concentration over the 50 km-modeling domain by the ecological benchmark for each acid gas). For further information on the environmental screening assessment approach, see Appendix 9 of the *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule* available in the docket for this action.

6. How do we conduct facility-wide assessments?

To put the source category risks in context, we typically examine the risks from the entire ''facility,'' where the facility includes all HAP-emitting operations within a contiguous area and under common control. In other words, we examine the HAP emissions not only from the source category emission points of interest, but also emissions of HAP from all other emission sources at the facility for which we have data. For this source category, we conducted the facility-wide assessment using a dataset compiled from CAA section 114 request data from 2016 and 2022, as well as from the 2017 NEI. The source category data were evaluated as described in section II.C. of this preamble: *What data collection activities were conducted to support this action?* Once a quality-assured source category dataset was available, the facility-wide file was then used to analyze risks due to the inhalation of HAP that are emitted ''facility-wide'' for the populations residing within 50 km of each facility, consistent with the methods used for the source category analysis described above. For these facility-wide risk analyses, the modeled source category risks were compared to the facility-wide risks to determine the portion of the facility-wide risks that could be attributed to the source category addressed in this risk assessment. We also specifically examined the facility that was associated with the highest estimate of risk and determined the percentage of that risk attributable to the source category of interest. The *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stack Source Category in Support of the 2023 Risk and Technology Review Proposed Rule,* available through the docket for this action, provides the methodology and results of the facility-wide analyses, including all facility-wide risks and the percentage of source category contribution to facility-wide risks.

7. How do we conduct community-based risk assessments?

In addition to the source category and facility-wide risk assessments, we also assessed the combined inhalation cancer risk from all local stationary sources of HAP for which we have emissions data. Specifically, we combined the modeled impacts from the facility-wide assessment (which includes category and non-category sources) with other nearby stationary point source model results. The facility-wide emissions used in this assessment are discussed in section II.C. of this preamble. For the other nearby point sources, we used AERMOD model results with emissions based primarily on the 2018 NEI. After combining these model results, we assessed cancer risks due to the inhalation of all HAP emitted by point sources for the populations residing within 10 km of coke oven facilities. In the community-based risk assessment, the modeled source category and facility-wide cancer risks were compared to the cancer risks from other nearby point sources to determine the portion of the risks that could be attributed to the source category addressed in this proposal. The document titled The *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stack Source Category in Support of the 2023 Risk and Technology Review Proposed Rule,* which is available in the docket for this rulemaking, provides the methodology and results of the community-based risk analyses.

8. How do we consider uncertainties in risk assessment?

Uncertainty and the potential for bias are inherent in all risk assessments, including those performed for this proposal. Although uncertainty exists, we believe that our approach, which used conservative tools and assumptions, ensures that our decisions are health and environmentally protective. A brief discussion of the uncertainties in the RTR emissions dataset, dispersion modeling, inhalation exposure estimates, and dose-response relationships follows below. Also included are those uncertainties specific to our acute screening assessments, multipathway screening assessments, and our environmental risk screening assessments. A more thorough discussion of these uncertainties is included in the *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule* available in the docket for this action.

a. Uncertainties in the RTR Emissions Dataset

Although the development of the RTR emissions dataset involved quality assurance/quality control processes, the accuracy of emissions values will vary depending on the source of the data, the degree to which data are incomplete or missing, the degree to which assumptions made to complete the datasets are accurate, errors in emission estimates, and other factors. The emission estimates considered in this analysis generally are annual totals for certain years, and they do not reflect short-term fluctuations during the course of a year or variations from year to year. The estimates of peak hourly emission rates for the acute effects screening assessment were based on an emission adjustment factor applied to the average annual hourly emission rates, which are intended to account for emission fluctuations due to normal facility operations.

b. Uncertainties in Dispersion Modeling

We recognize there is uncertainty in ambient concentration estimates associated with any model, including the EPA's recommended regulatory dispersion model, AERMOD. In using a model to estimate ambient pollutant concentrations, the user chooses certain options to apply. For RTR assessments, we select some model options that have the potential to overestimate ambient air concentrations (*e.g.,* not including plume depletion or pollutant transformation). We select other model options that have the potential to underestimate ambient impacts (*e.g.,* not including building downwash). Other options that we select have the potential to either under- or overestimate ambient levels (*e.g.,* meteorology and receptor locations). On balance, considering the directional nature of the uncertainties commonly present in ambient concentrations estimated by dispersion models, the approach we apply in the RTR assessments should yield unbiased estimates of ambient HAP concentrations. We also note that the selection of meteorology dataset location could have an impact on the risk estimates. As we continue to update and expand our library of meteorological station data used in our risk assessments, we expect to reduce this variability.

c. Uncertainties in Inhalation Exposure Assessment

Although every effort is made to identify all of the relevant facilities and emission points, as well as to develop accurate estimates of the annual emission rates for all relevant HAP, the uncertainties in our emission inventory likely dominate the uncertainties in the exposure assessment. Some uncertainties in our exposure assessment include human mobility, using the centroid of each census block, assuming lifetime exposure, and assuming only outdoor exposures. For most of these factors, there is neither an under nor overestimate when looking at the maximum individual risk or the incidence, but the shape of the distribution of risks may be affected. With respect to outdoor exposures, actual exposures may not be as high if people spend time indoors, especially for very reactive pollutants or larger particles. For all factors, we reduce uncertainty when possible. For example, with respect to census-block centroids, we analyze large blocks using aerial imagery and adjust locations of the block centroids to better represent the population in the blocks. We also add additional receptor locations where the population of a block is not well represented by a single location.

d. Uncertainties in Dose-Response Relationships

There are uncertainties inherent in the development of the dose-response values used in our risk assessments for cancer effects from chronic exposures and noncancer effects from both chronic and acute exposures. Some uncertainties are generally expressed quantitatively, and others are generally expressed in qualitative terms. We note, as a preface to this discussion, a point on dose-response uncertainty that is stated in the EPA's *2005 Guidelines for Carcinogen Risk Assessment;* namely, that ''the primary goal of EPA actions is protection of human health; accordingly, as an Agency policy, risk assessment procedures, including default options that are used in the absence of scientific data to the contrary, should be health protective'' (the EPA's *2005 Guidelines for Carcinogen Risk Assessment,* page 1–7). This is the approach followed here as summarized in the next paragraphs.

Cancer UREs used in our risk assessments are those that have been developed to generally provide an upper bound estimate of risk.[21] That is, they represent a ''plausible upper limit to the true value of a quantity'' (although this is usually not a true statistical confidence limit). In some circumstances, the true risk could be as low as zero; however, in other circumstances the risk could be greater.[22] Chronic noncancer RfC and reference dose (RfD) values represent chronic exposure levels that are intended to be health-protective levels. To derive dose-response values that are intended to be ''without appreciable risk,'' the methodology relies upon an uncertainty factor (UF) approach,[23] which considers uncertainty, variability, and gaps in the available data. The UFs are applied to derive dose-response values that are intended to protect against appreciable risk of deleterious effects.

Many of the UFs used to account for variability and uncertainty in the development of acute dose-response values are quite similar to those developed for chronic durations. Additional adjustments are often applied to account for uncertainty in extrapolation from observations at one exposure duration (*e.g.,* 4 hours) to derive an acute dose-response value at another exposure duration (*e.g.,* 1 hour). Not all acute dose-response values are developed for the same purpose, and care must be taken when interpreting the results of an acute assessment of human health effects relative to the dose-response value or values being exceeded. Where relevant to the estimated exposures, the lack of acute dose-response values at different levels of severity should be factored into the risk characterization as potential uncertainties.

Uncertainty also exists in the selection of ecological benchmarks for the environmental risk screening assessment. We established a hierarchy of preferred benchmark sources to allow selection of benchmarks for each environmental HAP at each ecological assessment endpoint. We searched for benchmarks for three effect levels (*i.e.,* no-effects level, threshold-effect level, and probable effect level), but not all combinations of ecological assessment/environmental HAP had benchmarks for all three effect levels. Where multiple effect levels were available for a particular HAP and assessment endpoint, we used all of the available effect levels to help us determine whether risk exists and whether the risk

[21] IRIS glossary (*https://ofmpub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&glossaryName=IRIS%20Glossary*).

[22] An exception to this is the URE for benzene, which is considered to cover a range of values, each end of which is considered to be equally plausible, and which is based on maximum likelihood estimates.

[23] See *A Review of the Reference Dose and Reference Concentration Processes,* U.S. EPA, December 2002, and *Methods for Derivation of Inhalation Reference Concentrations and Application of Inhalation Dosimetry,* U.S. EPA, 1994.

could be considered significant and widespread.

Although we make every effort to identify appropriate human health effect dose-response values for all pollutants emitted by the sources in this risk assessment, some HAP emitted by the source category are lacking dose-response assessments. Accordingly, these pollutants cannot be included in the quantitative risk assessment, which could result in quantitative estimates understating HAP risk. To help to alleviate this potential underestimate, where we conclude similarity with a HAP for which a dose-response value is available, we use that value as a surrogate for the assessment of the HAP for which no value is available. To the extent use of surrogates indicates appreciable risk, we may identify a need to increase priority for an IRIS assessment for that substance. We additionally note that, generally speaking, HAP of greatest concern due to environmental exposures and hazard are those for which dose-response assessments have been performed, reducing the likelihood of understating risk. Further, HAP not included in the quantitative assessment are assessed qualitatively and considered in the risk characterization that informs the risk management decisions, including consideration of HAP reductions achieved by various control options.

For a group of compounds that are unspeciated (*e.g.,* glycol ethers), we conservatively use the most protective dose-response value of an individual compound in that group to estimate risk. Similarly, for an individual compound in a group (*e.g.,* ethylene glycol diethyl ether) that does not have a specified dose-response value, we also apply the most protective dose-response value from the other compounds in the group to estimate risk.

e. Uncertainties in Acute Inhalation Screening Assessments

In addition to the uncertainties highlighted above, there are several factors specific to the acute exposure assessment that the EPA conducts as part of the risk review under section 112 of the CAA. The accuracy of an acute inhalation exposure assessment depends on the simultaneous occurrence of independent factors that may vary greatly, such as hourly emissions rates, meteorology, and the presence of a person. In the acute screening assessment that we conduct under the RTR program, we assume that peak emissions from the source category and reasonable worst-case air dispersion conditions (*i.e.,* 99th percentile) co-occur. We then include the additional assumption that a person is located at this point at the same time. Together, these assumptions represent a reasonable worst-case actual exposure scenario. In most cases, it is unlikely that a person would be located at the point of maximum exposure during the time when peak emissions and reasonable worst-case air dispersion conditions occur simultaneously.

f. Uncertainties in the Multipathway and Environmental Risk Screening Assessments

For each source category, we generally rely on site-specific levels of PB–HAP or environmental HAP emissions to determine whether a refined assessment of the impacts from multipathway exposures is necessary or whether it is necessary to perform an environmental screening assessment. This determination is based on the results of a three-tiered screening assessment that relies on the outputs from models—TRIM.FaTE and AERMOD—that estimate environmental pollutant concentrations and human exposures for five PB–HAP (dioxins, POM, mercury, cadmium, and arsenic) and two acid gases (HF and HCl). For lead, we use AERMOD to determine ambient air concentrations, which are then compared to the secondary NAAQS standard for lead. Two important types of uncertainty associated with the use of these models in RTR risk assessments and inherent to any assessment that relies on environmental modeling are model uncertainty and input uncertainty.[24]

Model uncertainty concerns whether the model adequately represents the actual processes (*e.g.,* movement and accumulation) that might occur in the environment. For example, does the model adequately describe the movement of a pollutant through the soil? This type of uncertainty is difficult to quantify. However, based on feedback received from previous EPA SAB reviews and other reviews, we are confident that the models used in the screening assessments are appropriate and state-of-the-art for the multipathway and environmental screening risk assessments conducted in support of RTRs.

Input uncertainty is concerned with how accurately the models have been configured and parameterized for the assessment at hand. For Tier 1 of the multipathway and environmental screening assessments, we configured the models to avoid underestimating exposure and risk. This was accomplished by selecting upper-end values from nationally representative datasets for the more influential parameters in the environmental model, including selection and spatial configuration of the area of interest, lake location and size, meteorology, surface water, soil characteristics, and structure of the aquatic food web. We also assume an ingestion exposure scenario and values for human exposure factors that represent reasonable maximum exposures.

In Tier 2 of the multipathway and environmental screening assessments, we refine the model inputs to account for meteorological patterns in the vicinity of the facility versus using upper-end national values, and we identify the actual location of lakes near the facility rather than the default lake location that we apply in Tier 1. By refining the screening approach in Tier 2 to account for local geographical and meteorological data, we decrease the likelihood that concentrations in environmental media are overestimated, thereby increasing the usefulness of the screening assessment. In Tier 3 of the screening assessments, we refine the model inputs again to account for hour-by-hour plume-rise and the height of the mixing layer. We can also use those hour-by-hour meteorological data in a TRIM.FaTE run using the screening configuration corresponding to the lake location. These refinements produce a more accurate estimate of chemical concentrations in the media of interest, thereby reducing the uncertainty with those estimates. The assumptions and the associated uncertainties regarding the selected ingestion exposure scenario are the same for all three tiers.

For the environmental screening assessment for acid gases, we employ a single-tiered approach. We use the modeled air concentrations and compare those with ecological benchmarks.

For all tiers of the multipathway and environmental screening assessments, our approach to addressing model input uncertainty is generally cautious. We choose model inputs from the upper end of the range of possible values for the influential parameters used in the models, and we assume that the exposed individual exhibits ingestion behavior that would lead to a high total exposure. This approach reduces the likelihood of not identifying high risks for adverse impacts.

Despite the uncertainties, when individual pollutants or facilities do not

[24] In the context of this discussion, the term ''uncertainty'' as it pertains to exposure and risk encompasses both *variability* in the range of expected inputs and screening results due to existing spatial, temporal, and other factors, as well as *uncertainty* in being able to accurately estimate the true result.

exceed screening threshold emission rates (*i.e.,* screen out), we are confident that the potential for adverse multipathway impacts on human health is very low. On the other hand, when individual pollutants or facilities do exceed screening threshold emission rates, it does not mean that impacts are significant, only that we cannot rule out that possibility and that a refined assessment for the site might be necessary to obtain a more accurate risk characterization for the source category.

The EPA evaluates the following HAP in the multipathway and/or environmental risk screening assessments, where applicable: arsenic, cadmium, dioxins/furans, lead, mercury (both inorganic and methyl mercury), POM, HCl, and HF. These HAP represent pollutants that can cause adverse impacts either through direct exposure to HAP in the air or through exposure to HAP that are deposited from the air onto soils and surface waters and then through the environment into the food web. These HAP represent those HAP for which we can conduct a meaningful multipathway or environmental screening risk assessment. For other HAP not included in our screening assessments, the model has not been parameterized such that it can be used for that purpose. In some cases, depending on the HAP, we may not have appropriate multipathway models that allow us to predict the concentration of that pollutant. The EPA acknowledges that other HAP beyond these that we are evaluating may have the potential to cause adverse effects and, therefore, the EPA may evaluate other relevant HAP in the future, as modeling science and resources allow.

IV. Analytical Results and Proposed Decisions

A. What actions are we taking pursuant to CAA sections 112(d)(2) and 112(d)(3)?

We are proposing the following pursuant to CAA sections 112(d)(2) and (3): [25] MACT standards for acid gases, hydrogen cyanide (HCN), mercury, and polycyclic aromatic hydrocarbons (PAH) from pushing operations for existing and new sources; MACT standards for acid gases, HCN, mercury, and PM (as a surrogate for nonmercury HAP metals [26]) from battery stacks for existing and new sources; and MACT standards for acid gases, mercury, PAH, and PM (as a surrogate for nonmercury HAP metals) from HNR HRSG control device main stacks for existing and new sources.

To determine the proposed MACT standards, we first calculated the MACT floor limits. The MACT floor limits were calculated by ranking the data for each emission point per HAP and determining the top 5 sources with emissions information, as per CAA sections 112(d)(2) and (3) for existing sources and the best performing source for new sources. These sources are referred to as the ''MACT floor pool.'' However, for two of the emissions points, ByP battery combustion and ByP and HNR pushing, we only had data from four facilities, so the MACT floor limits were based on data from the four facilities (except for mercury for pushing, we had data from five facilities); and for two other point sources, HNR Main stack and HNR bypass/waste stacks, we only had data from two facilities, so the MACT floor was based on data from the two facilities for these two emissions points.

The existing and new source MACT floor pool datasets were evaluated statistically to determine the distributions for both existing and new sources, by process type and by HAP. After determining the type of data distribution for the dataset, the upper predictive limit (UPL) was calculated using the corresponding equation for the distribution for that dataset and groupings of emission points. The UPL represents the value which one can expect the mean of a specified number of future observations (*e.g.,* 3-run average) to fall below for the specified level of confidence (99 percent), based upon the results from the same population. The UPL approach encompasses all the data point-to-data point variability in the collected data, as derived from the dataset to which it is applied. The UPL was then compared to 3 times the representative detection limit (RDL) to ensure that data measurement variability is addressed and the higher value used as the MACT limit. The EPA also considered BTF options for each of the HAP emitted from pushing operations, battery stacks and HNR HRSG control device main stacks for existing and new sources. The EPA did not identify any cost-effective BTF options for HAP from these three sources; therefore, the EPA is proposing MACT floor limits for the HAP from pushing, battery stacks and HNR HRSG control device main stacks. For details on the MACT floor limits and BTF options see the memorandum titled *Maximum Achievable Control Technology (MACT) Standard Calculations, MACT Cost Impacts, and Beyond-the-Floor Cost Impacts for Coke Ovens Facilities under 40 CFR part 63, subpart CCCCC* [27] (hereafter referred to as the ''MACT/BTF Memorandum''), located in the docket for the proposed rule (EPA–HQ–OAR–2002–0085). The results and proposed decisions based on the analyses performed pursuant to CAA sections 112(d)(2) and (3) are presented in Table 5.

TABLE 5—PROPOSED MACT STANDARDS FOR UNREGULATED HAP OR SOURCES DEVELOPED UNDER CAA SECTION 112(d)(2) AND (d)(3) FOR THE NESHAP FOR COKE OVENS: PUSHING, QUENCHING, BATTERY STACKS

[Subpart CCCCC]

Source or process	Pollutant	Type of affected source (new or existing)	
		Existing	New
Pushing	acid gases	0.0052 lb/ton coke [UPL]	5.1E–04 lb/ton coke [UPL].
	HCN	0.0011 lb/ton coke [UPL]	3.8E–05 lb/ton coke [UPL].
	mercury	8.9E–07 lb/ton coke [UPL]	3.4E–07 lb mercury/ton coke [3xRDL].

[25] The EPA not only has authority under CAA sections 112(d)(2) and (3) to set MACT standards for previously unregulated HAP emissions at any time, but is required to address any previously unregulated HAP emissions as part of its periodic review of MACT standards under CAA section 112(d)(6). *LEAN* v. *EPA,* 955 F3d at 1091–1099.

[26] Nonmercury HAP metals include the following compounds: antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium.

[27] *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.* D. L. Jones, U.S. Environmental Protection Agency, and G. Raymond, RTI International. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. May 1, 2023. Docket ID No. EPA–HQ–OAR–2002–0085.

TABLE 5—PROPOSED MACT STANDARDS FOR UNREGULATED HAP OR SOURCES DEVELOPED UNDER CAA SECTION 112(d)(2) AND (d)(3) FOR THE NESHAP FOR COKE OVENS: PUSHING, QUENCHING, BATTERY STACKS—Continued

[Subpart CCCCC]

Source or process	Pollutant	Type of affected source (new or existing)	
		Existing	New
Battery Stack	PAH	3.4E–04 lb/ton coke [UPL]	1.4E–05 lb/ton coke [UPL].
	acid gases	0.083 lb/ton coke [UPL]	0.013 lb/ton coke [UPL].
	HCN	0.0039 lb/ton coke [UPL]	7.4E–04 lb/ton coke [UPL].
	mercury	5.8E–05 lb/ton coke [UPL]	7.1E–06 lb/ton coke [UPL].
	PM [28]	0.10 PM gr/dscf [UPL]	0.014 gr/dscf [UPL].
HNR HRSG Control Device Main Stack	acid gases	0.038 gr/dscf [UPL]	0.0029 gr/dscf [UPL].
	mercury	2.4E–06 gr/dscf [UPL]	1.5E–06 gr/dscf [UPL].
	PAH	4.7E–07 gr/dscf [UPL]	3.7E–07 gr/dscf [UPL].
	PM [28]	0.0065 gr/dscf [UPL]	7.5E–04 gr/dscf [UPL].

Note: gr/dscf = grains per dry standard cubic feet. RDL = representative detection level. UPL = upper prediction limit.

For HNR bypass/waste heat stacks, there is one HNR facility without HRSGs that sends COE directly to the atmosphere via waste heat stacks, 24 hours per day, 7 days per week. The other four heat recovery facilities utilize HRSGs most of the time (*i.e.,* process COE through the HRSG units) but send COE via ductwork to a bypass stack periodically to conduct maintenance on the HRSGs or because of other operational issues. All four heat recovery facilities with HRSGs have limits in their permits prepared under CAA title V requirements that limit the number of hours per year that they are allowed to use the bypass stacks. We are proposing to establish two subcategories with regard to the HNR bypass/waste stacks based on whether or not they process COE through an HRSG, as follows: (1) HNR facilities that have HRSGs; and (2) HNR facilities that do not have HRSGs. We only received CAA section 114 request test data (in 2016 and 2022) for bypass/waste stacks from two HNR facilities that have HRSGs (SunCoke's Granite City, Illinois, and Franklin Furnace, Ohio facilities). We did not receive bypass/waste stacks test data from the one HNR facility without HRSGs (SunCoke's Vansant, Virginia) nor for bypass/waste stacks at the other two HNR facilities with HRSGs (SunCoke's East Chicago, Indiana, and Middletown, Ohio, facilities). However, we concluded that the COE data from SunCoke's Granite City, Illinois, and SunCoke Franklin Furnace, Ohio, facilities (in units of gr/dscf by individual HAP tested) are representative of emissions from bypass/waste heat stacks for all 5 HNR facilities (including SunCoke's Vansant, Virginia, facility) due to the nearly identical conditions in the ovens at all the HNR facilities. The MACT floor limit, which is determined from the average of the lowest-emitting top 5 facilities, as stated in CAA section 112(d)(2), is therefore equal to the average emissions from SunCoke's Granite City, Illinois, and SunCoke Franklin Furnace, Ohio, facilities, where the COE from bypass/waste heat stacks are reported as the individual HAP emissions able to be tested with EPA test methods (in units of gr/dscf).

To determine whether or not more stringent MACT limits should be proposed as BTF standards for the two subcategories described above, we initially evaluated potential additional control options to lower the MACT limits for five HAP (referred to as ''BTF Approach 1'') as follows: activated carbon injection (ACI) with 95 percent control efficiency for mercury; wet alkaline scrubber (WAS) with 95 percent control efficiency for PM as a surrogate for nonmercury HAP metals;[26] WAS with 99.9 percent control efficiency for acid gases (HCl and HF); regenerative thermal oxidizer (RTO) with 98 percent control efficiency for PAH; and RTO with 98 percent control efficiency for formaldehyde.

Next, we evaluated the BTF costs to control two HAP (mercury and nonmercury HAP metals) (referred to as ''BTF Approach 2'') as follows: a baghouse with 99.9 percent control efficiency for PM as a surrogate for HAP metals; and ACI with 90 percent control efficiency for mercury. Table 6 shows the estimated capital and annualized costs, emission reductions, and cost effectiveness of the BTF controls for mercury, PM, acid gases, PAH, and formaldehyde at all five HNR facilities for BTF Approach 1. Table 6 shows the estimated capital and annualized costs, emission reductions, and cost-effectiveness of the BTF controls for mercury and PM (as a surrogate for nonmercury HAP metals) for BTF Approach 2.

TABLE 6—COMPARISON OF ESTIMATED COSTS OF CONTROLS AND EMISSION REDUCTIONS FOR POTENTIAL BTF MACT STANDARDS FOR HNR COKE FACILITIES FOR MERCURY AND NONMERCURY METALS FOR B/W STACKS UNDER BTF APPROACHES 1 AND 2

Cost item [a]	Approach 1		Approach 2	
	HNR facilities with HRSGs (includes 4 facilities)	HNR facilities without HRSGs (includes one facility)	HNR facilities with HRSGs (includes 4 facilities)	HNR facilities without HRSGs (includes one facility)
Capital Cost				
Ductwork	$1,249K	$540K	$1,249K	$540K

[28] PM as a surrogate for HAP metals.

TABLE 6—COMPARISON OF ESTIMATED COSTS OF CONTROLS AND EMISSION REDUCTIONS FOR POTENTIAL BTF MACT STANDARDS FOR HNR COKE FACILITIES FOR MERCURY AND NONMERCURY METALS FOR B/W STACKS UNDER BTF APPROACHES 1 AND 2—Continued

Cost item [a]	Approach 1		Approach 2	
	HNR facilities with HRSGs (includes 4 facilities)	HNR facilities without HRSGs (includes one facility)	HNR facilities with HRSGs (includes 4 facilities)	HNR facilities without HRSGs (includes one facility)
ACI	$1,299K	$314K	$1,299K	$314K
BH	n/a	n/a	$30M	$6.6M
WAS	$225M	$54M	n/a	n/a
RTO	$150M	$36M	n/a	n/a
Total Capital Cost	$378M	$91M	$33M	$7.5M
Annual Cost				
Ductwork	$315K	$426K	$315K	$426K
ACI	$6.7M	$1.6M	$6.7M	$1.6M
BH	n/a	n/a	$5.7M	$2.6M
WAS	$32M	$7.7M	n/a	n/a
RTO	$57M	$13M	n/a	n/a
Total Annual Cost	$95M	$22M	$13M	$4.7M
Uncontrolled Emissions (ton/yr, unless otherwise indicated) [b]				
Mercury (lbs/yr)	60	160	60	160
Nonmercury metal HAP	1.5	4.0	1.5	4.0
Acid Gases	360	956	n/a	n/a
PAH	0.0034	0.0091	n/a	n/a
Formaldehyde	0.28	0.74	n/a	n/a
Emission Reductions (ton/yr, unless otherwise indicated) [b]				
Mercury w/ACI (lb/yr) [CE% [c]]	57 [95%]	152 [95%]	54 [90%]	144 [90%]
Nonmercury Metal HAP w/BH [CE%]	n/a	n/a	1.5 [99.9%]	4.0 [99.9%]
Nonmercury Metal HAP w/WAS [CE%]	1.4 [95%]	3.8 [95%]	n/a	n/a
Acid Gases w/WAS [CE%]	359 [99.9%]	955 [99.9%]	n/a	n/a
PAH w/RTO [CE%]	0.0034 [98%]	0.0089 [98%]	n/a	n/a
Formaldehyde w/RTO [CE%]	0.27 [98%]	0.72 [98%]	n/a	n/a
Pollutant Cost Effectiveness ($/ton, unless otherwise indicated)				
Mercury w/ACI ($/lb)	$117K	$11K	$123K	$11K
Nonmercury Metal HAP w/BH	n/a	n/a	$4.0M	$756K
Nonmercury Metal HAP w/WAS	$22M	$2.0M	n/a	n/a
Acid Gases w/WAS	$88K	$8.1K	n/a	n/a
PAH w/RTO	$17B	$1.4B	n/a	n/a
Formaldehyde w/RTO	$209M	$18M	n/a	n/a

[a] Acid gases = HCl and HF; activated carbon injection = ACI; control efficiency = CE; baghouse = BH; not applicable to Approach 2 = n/a; regenerative thermal oxidizer = RTO; wet alkaline scrubber = WAS.

[b] The COE from bypass/waste heat stacks are broken down into the individual HAP that are able to be tested with EPA test methods. Once the COE pass through control devices, the emissions are no longer considered COE.

[c] Typically, ACI achieves about 90 percent mercury control, which is reflected in Approach 2. For Approach 1, the facility also would need to install a WAS for acid gas control. Because there is a small amount of Hg control from the WAS, incorporating the WAS control with the ACI control results in an estimated overall Hg of 95 percent.

Based on consideration of the estimated capital costs, annualized costs, reductions and cost effectiveness of the two approaches described above, we are proposing BTF emissions limits for the individual COE HAP, as nonmercury metals and mercury from B/W stacks, consistent with BTF Approach 2 for the subcategory that includes HNR facilities without HRSGs, which includes one facility (Vansant). We are proposing this option because we estimate that BTF Approach 2 achieves similar reductions of mercury. Mercury reduction under Approach 1 is 57 lb/yr for HNR facilities with HRSGs and 152 lb/yr for HNR facilities without HRSGs, while mercury reduction under Approach 2 is 54 lb/yr for HNR facilities with HRSGs and 144 lb/yr for HNR facilities without HRSGs. Nonmercury metal reduction under Approach 1 is 1.4 tpy for HNR facilities with HRSGs and 3.8 tpy for HNR facilities without HRSGs, while nonmercury metal reduction under Approach 2 is 1.5 tpy for HNR facilities with HRSGs and 4.0 tpy for HNR facilities without HRSGs.

The BTF Approach 2 achieves similar (although slightly lower) reductions of mercury compared to Approach 1 at similar cost effectiveness (slightly higher $/lb for HNR with HRSG but same $/lb value for HNR without HRSGs). However, Approach 2 includes much more cost-effective controls for nonmercury HAP (COE) metals and slightly more reductions.

We conclude that both approaches are cost-effective for mercury. Regarding nonmercury metals, the BTF Approach 2 is clearly cost-effective based on historical decisions regarding nonmercury HAP metals (for example, the EPA accepted cost effectiveness of $1.3 million per ton HAP metals in the 2012 Secondary Lead Smelters RTR final rule based on 2009 dollars). BTF Approach 1 also could potentially be considered cost-effective for nonmercury metals. However, we conclude it is appropriate to propose the more cost-effective approach because it achieves similar reductions of the COE HAP metals at lower cost. With regard to the other three COE HAP from HNR without a HRSG subcategory (acid gases, formaldehyde and PAHs), based on consideration of capital costs, annual costs and cost effectiveness, we are proposing MACT floor limits (not BTF limits).

For the nonrecovery facility without HRSGs subcategory, the potential BTF limits for COE HAP emitted as nonmercury HAP metals and mercury were calculated by assuming the addition of a baghouse (with estimated 99.9 percent reduction for metals) and ACI (with 90 percent reduction for mercury). We then compared the limits to the applicable 3xRDL value to ensure a measurable standard. For HAP metals, the 3xRDL value was greater than the BTF limit, and thus the proposed BTF standard was set at the 3xRDL value (a measurable value), which is 2 percent of the level of the MACT floor standard. For mercury, the 3xRDL value was less than the BTF UPL limit, and thus the proposed BTF standard was set at the BTF UPL limit. The results and proposed decisions based on the analyses performed pursuant to CAA sections 112(d)(2) and (3) for HNR bypass/waste heats stacks are presented in Table 7.

TABLE 7—MACT FLOOR AND BTF STANDARDS DEVELOPED FOR EMISSIONS FROM COKE OVENS HNR HRSG BYPASS/WASTE HEAT STACKS SOURCES

Source or process	Pollutant [a b]	Type of MACT standard [a]	
		Existing	New
HNR bypass/waste heat stack for 2 subcategories (for all 5 HNR facilities).	acid gases	0.13 gr/dscf [UPL]	0.070 gr/dscf [UPL].
	Formaldehyde	0.0011 gr/dscf	1.9E–05 gr/dscf.
	PAH	2.4E–06 gr/dscf [UPL]	2.4E–06 gr/dscf [UPL].
Heat recovery facilities (only) bypass/waste heat stack (with HRSGs) subcategory.	Mercury	1.7E–05 gr/dscf [UPL]	7.8E–06 gr/dscf [UPL].
	PM [28]	0.034 gr/dscf [UPL]	0.025 gr/dscf [UPL].
Nonrecovery facilities (only) waste heat stack (without HRSGs) (BTF) subcategory.	Mercury	BTF 1.7E–06 gr/dscf	BTF 7.8E–07 gr/dscf.
	PM [28]	BTF 6.6E–04 gr/dscf	BTF 6.6E–04 gr/dscf.

[a] gr/dscf = grains per dry standard cubic feet. RDL = representative detection level. UPL is the upper performance limit. PM is a surrogate for nonmercury metal HAP.

[b] Once the bypass/waste heat stacks COE pass through control devices, the emissions are no longer considered COE.

We are proposing that testing for compliance with these proposed MACT and BTF limits be performed every 5 years. Annualized costs for testing, including recordkeeping and reporting, are estimated to be $3.2 million/year for the 11 operating facilities in the source category, or an average of $290,000 per year per facility.

We are soliciting comments regarding other potential approaches to establish emissions standards for the HRSG main stacks and bypass stacks, including: (1) whether the EPA should consider the emission points all together (*i.e.,* HRSG main stack plus HRSG bypass stack emissions) and establish standards based on the best five units or best five facilities including emissions from the HRSGs and their control devices, and emissions from the bypass over a period of time (*e.g.,* per year or per month); or (2) a standard that is based in part on limiting the number of hours per year or per month that bypass stacks can be used.

We are also soliciting comments regarding the use of bypass stacks. For the Coke Ovens: Pushing, Quenching, Battery Stacks source category, we understand that bypass of HRSGs is needed for maintenance and repair of HRSGs or their control devices. Furthermore, the facilities recover heat from coke oven exhaust and sell or produce power for sale, so they lose revenue when bypass is used; therefore, it is in the facilities' interest to not bypass HRSGs. For this source category's HNR subcategory, we have emissions tests data and, therefore, are able to propose numeric emissions limits for these emissions sources. We solicit comments regarding whether the EPA should consider other approaches to regulate bypass stacks.

For details of how these MACT and BTF standards were developed and other BTF options that were considered see the MACT/BTF memorandum,[27] located in the docket for the proposed rule (EPA–HQ–OAR–2002–0085).

B. What are the results of the risk assessment and analyses for the coke ovens: pushing, quenching, and battery stacks source category?

1. Chronic Inhalation Risk Assessment Results

The results of the chronic baseline inhalation cancer risk assessment indicate that, based on estimates of current actual emissions, the MIR posed by the Coke Ovens: Pushing, Quenching, and Battery Stacks source category is 9-in-1 million driven by arsenic emissions primarily from bypass/waste heat stacks. The total estimated cancer incidence based on actual emission levels is 0.02 excess cancer cases per year, or 1 case every 50 years. No people are estimated to have inhalation cancer risks above 100-in-1 million due to actual emissions, and the population exposed to cancer risks greater than or equal to 1-in-1 million is approximately 2,900 (see Table 8 of this preamble). In addition, the maximum modeled chronic noncancer TOSHI for the source category based on actual emissions is estimated to be 0.1 (for developmental effects from arsenic emissions).

TABLE 8—COKE OVEN PUSHING, QUENCHING, AND BATTERY STACKS SOURCE CATEGORY INHALATION RISK ASSESSMENT RESULTS

Risk assessment	Number of facilities	Maximum individual cancer risk (in 1 million) [a]	Estimated population at increased risk of cancer ≥1-in-1 million	Estimated annual cancer incidence (cases per year)	Maximum chronic noncancer TOSHI	Maximum screening acute noncancer HQ
Based on Actual Emissions Level						
Source Category Emissions	14	9	2,900	0.02	0.1 (arsenic)	HQ_{REL} = 0.6 (arsenic).
Facility-Wide [b]	14	50	2.7 million	0.2	2 (hydrogen cyanide)	HQ_{REL} = 0.6 (arsenic).
Based on Allowable Emissions Level						
Source Category Emissions	14	10	440,000	0.05	0.2 (arsenic).	

[a] Maximum individual excess lifetime cancer risk due to HAP emission.
[b] See "Facility-Wide Risk Results" in section III.C.6. of this preamble for more detail on this risk assessment.

Considering MACT-allowable emissions, results of the inhalation risk assessment indicate that the cancer MIR is 10-in-1 million, driven by arsenic emissions primarily from HNR pushing and bypass/waste heat stacks. The total estimated cancer incidence from this source category based on allowable emissions is 0.05 excess cancer cases per year, or one excess case every 20 years. No people are estimated to have inhalation cancer risks above 100-in-1 million due to allowable emissions, and the population exposed to cancer risks greater than or equal to 1-in-1 million is approximately 440,000. In addition, the maximum modeled chronic noncancer TOSHI for the source category based on allowable emissions is estimated to be 0.2 (for developmental effects from arsenic emissions).

2. Screening Level Acute Risk Assessment Results

As presented in Table 8 of this preamble, the estimated worst-case off-site acute exposures to emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category result in a maximum modeled acute HQ of 0.6 based on the REL for arsenic. Detailed information about the assessment is provided in *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule* available in the docket for this action.

3. Multipathway Risk Screening Results

Of the 14 facilities in the source category, all 14 emit PB–HAP, including arsenic, cadmium, dioxins, mercury, and POMs. Emissions of these PB–HAP from each facility were compared to the respective pollutant-specific Tier 1 screening emission thresholds. The Tier 1 screening analysis indicated 14 facilities exceeded the Tier 1 emission threshold for arsenic, dioxins, mercury, and POM; and two facilities exceeded for cadmium.

For facilities that exceeded the Tier 1 multipathway screening threshold emission rate for one or more PB–HAP, we used additional facility site-specific information to perform a Tier 2 multipathway risk screening assessment. The multipathway risk screening assessment based on the Tier 2 gardener scenario resulted in a maximum cancer Tier 2 cancer screening value (SV) equal to 400 driven by arsenic emissions. Individual Tier 2 cancer screening values for dioxin and POM emissions were less than 1 for the gardener scenario. The maximum Tier 2 cancer SV, based on the fisher scenario, is equal to 10, with arsenic and dioxin emissions contributing to the SV, with a maximum individual Tier 2 SV of 10 for arsenic and a maximum Tier 2 SV of 5 for dioxin emissions. The maximum POM SV was less than 1. The multipathway risk screening assessment based on the Tier 2 fisher scenario resulted in a maximum noncancer Tier 2 SV equal to 6 for methyl mercury and less than 1 for cadmium emissions.

A Tier 3 cancer screening assessment was performed for arsenic based on the gardener scenario as well as a Tier 3 noncancer screening assessment for methyl mercury based on the fisher scenario. The Tier 3 gardener scenario was refined by identifying the location of the residence most impacted by arsenic emissions from the facility as opposed to the worst-case near-field location used in the Tier 2 assessment. Based on these Tier 3 refinements to the gardener scenario, the maximum Tier 3 cancer screening value for arsenic was adjusted from 400 to 300. For the fisher scenario, we evaluated the Tier 2 noncancer SV for methyl mercury, to determine whether the results would change based on a review of the lakes, to determine if they were fishable. This review resulted in no change to the Tier 2 noncancer SV of 6 for methyl mercury.

An exceedance of a screening threshold emission rate or SV in any of the tiers cannot be equated with a risk value or an HQ (or HI). Rather, it represents a high-end estimate of what the risk or hazard may be. For example, an SV of 6 for a noncarcinogen can be interpreted to mean that the Agency is confident that the HQ would be lower than 6. Similarly, a Tier 2 cancer SV of 300 means that we are confident that the cancer risk is lower than 300-in-1 million. Our confidence comes from the conservative, or health-protective, assumptions encompassed in the screening tiers. The Agency chooses inputs from the upper end of the range of possible values for the influential parameters used in the screening tiers, and the Agency assumes that the exposed individual exhibits ingestion behavior that would lead to a high total exposure.

The EPA determined that it is not necessary to go beyond the Tier 3 gardener or Tier 2 fisher scenario and conduct a site-specific assessment for arsenic and mercury. The EPA compared the Tier 2 and 3 screening results to site-specific risk estimates for five previously assessed source categories. These are the five source categories, assessed over the past 4 years, which had characteristics that make them most useful for interpreting the Coke Ovens: Pushing, Quenching, and Battery Stacks screening results. For these source categories, the EPA assessed fisher and/or gardener risks for arsenic, cadmium, and/or mercury by conducting site-specific assessments. The EPA used AERMOD for air dispersion and Tier 2 screens that used multi-facility aggregation of chemical loading to lakes where appropriate. These assessments indicated that cancer and noncancer site-specific risk values were at least 50 times lower than the respective Tier 2 screening values for the assessed facilities, with the exception of noncancer risks for cadmium for the gardener scenario, where the reduction was at least 10 times (refer to EPA Docket ID: EPA–HQ–OAR–2017–0015 and EPA–HQ–OAR–2019–0373 for a copy of these reports).[29]

Based on our review of these analyses, if the Agency was to perform a site-specific assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks source category, the Agency would expect similar magnitudes of decreases from the Tier 2 and 3 SV. As such, based on the conservative nature of the screens and the level of additional refinements that would go into a site-specific multipathway assessment, were one to be conducted, we are confident that the HQ for ingestion exposure, specifically mercury through fish ingestion, is less than 1. For arsenic, maximum cancer risk posed by fish ingestion would also be reduced to levels below 1-in-1 million, and maximum cancer risk under the rural gardener scenario would decrease to 5-in-1 million or less at the MIR location. Further details on the Tier 3 screening assessment can be found in the *Residual Risk Assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks, Source Category in Support of the 2023 Risk and Technology Review Proposed Rule.*

In evaluating the potential for multipathway risk from emissions of lead, we compared modeled annual lead concentrations to the primary NAAQS for lead (0.15 microgram per cubic meter (μg/m^3)). The highest annual lead concentration of 0.014 μg/m^3 is well below the NAAQS for lead, indicating low potential for multipathway risk of concern due to lead emissions.

4. Environmental Risk Screening Results

As described in section III.A. of this preamble, we conducted an environmental risk screening assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks source category for the following pollutants: arsenic, cadmium, dioxin, HCl, HF, lead, mercury (methyl mercury and divalent mercury), and POMs.

In the Tier 1 screening analysis for PB–HAP (other than lead, which was evaluated differently), the maximum screening value was 80 for methyl mercury emissions for the surface soil No Observed Adverse Effects Level (NOAEL) avian ground insectivores benchmark. The other pollutants (arsenic, cadmium, dioxins, POMs, divalent mercury, methyl mercury) had Tier 1 screening values above various benchmarks. Therefore, a Tier 2 screening assessment was performed for arsenic, cadmium, dioxins, POMs, divalent mercury, and methyl mercury emissions. In the Tier 2 screen no PB–HAP emissions exceeded any ecological benchmark.

In evaluating the potential for multipathway risk from emissions of lead, we compared modeled annual lead concentrations to the primary NAAQS for lead (0.15 μg/m3). The highest annual lead concentration is well below the NAAQS for lead, indicating low potential for multipathway risk of concern due to lead emissions. We did not estimate any exceedances of the secondary lead NAAQS.

For HCl and HF, the average modeled concentration around each facility (*i.e.,* the average concentration of all off-site data points in the modeling domain) did not exceed any ecological benchmark. In addition, each individual modeled concentration of HCl and HF (*i.e.,* each off-site data point in the modeling domain) was below the ecological benchmarks for all facilities.

Based on the results of the environmental risk screening analysis, we do not expect an adverse environmental effect as a result of HAP emissions from this source category.

5. Facility-Wide Risk Results

An assessment of facility-wide (or ''whole facility'') risks was performed as described above to characterize the source category risk in the context of whole facility risks. Whole facility risks were estimated using the data described in section III.C. of this preamble. The maximum lifetime individual cancer risk posed by the 14 modeled facilities, based on whole facility emissions is 50-in-1 million, with COE from coke oven doors (a regulated source in the Coke Oven Batteries NESHAP source category), driving the whole facility risk. The total estimated cancer incidence based on facility-wide emission levels is 0.2 excess cancer cases per year. No people are estimated to have inhalation cancer risks above 100-in-1 million due to facility-wide emissions, and the population exposed to cancer risk greater than or equal to 1-in-1 million is approximately 2.7 million people. These facility-wide estimated cancer risks are substantially lower than the estimated risks in the 2005 Coke Ovens RTR rulemaking (see 70 FR 1992, April 15, 2005). For example, the facility-wide MIR in the 2005 final rule (based on estimated actual emissions) was at least 500-in-1 million. The facility-wide MIRs in 2005 also were driven by estimated COE from coke oven doors. The estimated cancer risks are lower in this current action largely due to the following: (1) the COE from coke oven doors in 2005 were based on an older equation and the current COE have been estimated using a revised equation (as described in section IV.D.6. of this preamble); and (2) the facility driving the risks in 2005 was a MACT track facility that is no longer operating.

Regarding the noncancer risk assessment, the maximum chronic noncancer HI posed by whole facility emissions is estimated to be 2 (for the neurological and thyroid systems as the target organs) driven by emissions of hydrogen cyanide from CBRPs, which are emissions sources not included within the source category addressed in the risk assessment in this proposed rule. Approximately 60 people are estimated to be exposed to a TOSHI greater than 1 due to whole facility emissions. The results of the analysis are summarized in Table 8 above.

6. Community-Based Risk Assessment

We also conducted a community-based risk assessment for the Coke Ovens: Pushing, Quenching, and Battery Stacks source category. The goal of this assessment is to estimate cancer risk from HAP emitted from all local stationary point sources for which we have emissions data. We estimated the overall inhalation cancer risk due to emissions from all stationary point sources impacting census blocks within 10 km of the 14 coke oven facilities. Specifically, we combined the modeled impacts from category and non-category HAP sources at coke oven facilities, as well as other stationary point source HAP emissions. Within 10 km of coke oven facilities, we identified 583 facilities not in the source category that could potentially also contribute to HAP inhalation exposures.

The results indicate that the community-level maximum individual cancer risk is 100-in-1 million with 99 percent of the risk coming from a source outside the source category. Furthermore, there are no people

[29] EPA Docket records (EPA–HQ–OAR–2017–0015): *Appendix 11 of the Residual Risk Assessment for the Taconite Manufacturing Source Category in Support of the Risk and Technology Review 2019 Proposed Rule; Appendix 11 of the Residual Risk Assessment for the Integrated Iron and Steel Source Category in Support of the Risk and Technology Review 2019 Proposed Rule; Appendix 11 of the Residual Risk Assessment for the Portland Cement Manufacturing Source Category in Support of the 2018 Risk and Technology Review Final Rule; Appendix 11 of the Residual Risk Assessment for the Coal and Oil-Fired EGU Source Category in Support of the 2018 Risk and Technology Review Proposed Rule;* and EPA Docket: (EPA–HQ–OAR–2019–0373): *Appendix 11* of the *Residual Risk Assessment for Iron and Steel Foundries Source Category in Support of the 2019 Risk and Technology Review Proposed Rule.*

exposed to cancer risks greater than 100-in-1 million. The population exposed to cancer risks greater than or equal to 1-in-1 million in the community-based assessment is approximately 1.1 million people. For comparison, approximately 2,900 people have cancer risks greater than or equal to 1-in-1 million due to the process emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category, and approximately 440,000 people have cancer risks greater than 1-in-1 million due to facility-wide emissions (see Table 8 of this preamble). The overall cancer incidence for this exposed population (*i.e.,* people with risks greater than or equal to 1-in-1 million and living within 10 km of coke oven facilities) is 0.07, with 4 percent of the incidence due to emissions from Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP processes, 59 percent from emissions of non-category processes at coke oven facilities (that is, a total of 63 percent from emissions from coke oven facilities) and 37 percent from emissions from other nearby stationary sources that are not coke oven facilities.

C. What are our proposed decisions regarding risk acceptability, ample margin of safety, and adverse environmental effect?

1. Risk Acceptability

As noted in section III.A. of this preamble, we weigh a wide range of health risk measures and factors in our risk acceptability determination, including the cancer MIR, the number of persons in various cancer and noncancer risk ranges, cancer incidence, the maximum noncancer TOSHI, the maximum acute noncancer HQ, and risk estimation uncertainties (54 FR 38044, September 14, 1989).

Under the current MACT standards for the Coke Ovens: Pushing, Quenching, and Battery Stacks source category, the risk results indicate that the MIR is 9-in-1 million, driven by emissions of arsenic. The estimated incidence of cancer due to inhalation exposures is 0.02 excess cancer case per year. No people are estimated to have inhalation cancer risks greater than 100-in-1 million, and the population estimated to be exposed to cancer risks greater than or equal to 1-in-1 million is approximately 2,900. The estimated maximum chronic noncancer TOSHI from inhalation exposure for this source category is 0.1 for developmental effects. The acute risk screening assessment of reasonable worst-case inhalation impacts indicates a maximum acute HQ of 0.6.

Considering all of the health risk information and factors discussed above, including the uncertainties discussed in section III. of this preamble, the EPA proposes that the risks for this source category under the current NESHAP provisions are acceptable.

2. Ample Margin of Safety Analysis and Proposed Controls

The second step in the residual risk decision framework is a determination of whether more stringent emission standards are required to provide an ample margin of safety to protect public health. In making this determination, we considered the health risk and other health information considered in our acceptability determination, along with additional factors not considered in the risk acceptability step, including costs and economic impacts of controls, technological feasibility, uncertainties, and other relevant factors, consistent with the approach of the 1989 Benzene NESHAP.

The proposed BTF limit for PM, as a surrogate for nonmercury HAP metals, which we are proposing pursuant to CAA sections 112(d)(2) and (3) for HRSG waste heat stacks in the Coke Ovens: Pushing, Quenching, and Battery Stack source category, described in section IV.A. above, would achieve a reduction of the metal HAP emissions (*e.g.,* arsenic and lead). This reduction in emissions also would reduce the estimated MIR due to arsenic from these units from 9-in-1 million to less than 1-in-1 million at a cost of $756,000 per ton nonmercury metals. The overall MIR for this source category would be reduced from a 9-in-1 million to 2-in-1 million, where the 2-in-1 million is due to arsenic emissions from the quench tower at U.S. Steel Clairton. We evaluated the potential to propose this same PM emission limit for the HNR waste heat stacks under CAA section 112(f); however, because the control technology would be infeasible to install, operate and implement within the maximum time allowed under CAA section 112(f),[30] we are proposing the emission limit as a BTF standard under CAA sections 112(d)(2) and (3) only.

We did not identify any other potential cost-effective controls to reduce the remaining risk (2-in-1 million) from quench towers (or from any other emission source). Therefore, based on all of the information discussed earlier in this section, we conclude that the current standards in the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP provide an ample margin of safety to protect public health.

Although we are not proposing the BTF PM limit for waste stacks as part of our ample margin of safety analysis, as described earlier in this section, we note that once the proposed rule for Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP is fully implemented (within 3 years), the MIR would be reduced from 9-in-1 million to 2-in-1 million and the total population living within 50 km of a facility with risk levels greater than or equal to 1-in-1 million due to emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category would be reduced from 2,900 to 390 people due to the BTF PM limit. However, the total estimated cancer incidence would remain unchanged at 0.02 excess cancer cases per year, and the maximum modeled chronic noncancer TOSHI for the source category would remain unchanged at 0.1 (for respiratory effects from hydrochloric acid emissions). The estimated worst-case acute exposures to emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category would be reduced from a maximum acute HQ of 0.6 to 0.3, based on the REL for arsenic.

3. Adverse Environmental Effect

Based on our screening assessment of environmental risk presented in section IV.B.4. of this preamble, we have determined that HAP emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category do not result in an adverse environmental effect, and we are proposing that it is not necessary to set a more stringent standard to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.

D. What are the results and proposed decisions based on our technology review?

We have reviewed the standards under the two rules, Coke Ovens: Pushing, Quenching, and Battery Stack and Coke Oven Batteries, and considered whether revising the standards is necessary based on

[30] The facility that is affected by the new BTF PM limit is located between three rivers, a state road, and a railroad track. Therefore, due to the unique configuration of facility, the resulting lack of space available to construct control devices and ductwork to reduce arsenic emissions from bypass stacks creates an impediment to a typical construction schedule. We estimate that the facility will need 3 years to complete all this work and comply with the new PM limit. Consequently, we are proposing this standard under CAA sections 112(d)(2) and (3) and proposing the maximum amount of time allowed under CAA section 112(d) be provided (3 years) to comply. See section IV.F of this preamble for further explanation of why we are proposing 3 years to comply with the BTF limit.

developments in practices, processes, and control technologies. For the Coke Ovens: Pushing, Quenching, and Battery Stack source category, we did not identify developments in practices, processes, or technologies to further reduce HAP emissions from pushing coke from ovens and from quench tower sources in the source category. The pushing sources already are equipped with capture and control devices, and quench tower emissions are controlled by baffles inside of the quench towers and with limits on quench water dissolved solids. However, we are seeking information on emissions and on control options and work practice standards to reduce ByP battery stack emissions and to reduce soaking emissions from HNR ovens. These subjects are discussed in sections 1. and 2. below.

For the Coke Oven Batteries source category, we did not identify any developments in practices, processes, or controls that would reduce charging emissions from ByP or HNR facilities regulated under the source category. The current rule requires the use of baghouses and scrubbers to minimize emissions from charging and to limit opacity from control devices used for charging emissions at HNR facilities. However, we identified improvements in control of ByP battery leaks, and we are proposing reduced allowable leak limits for leaks from doors, lids, and offtakes at ByP facilities that range from a 10 to 70 percent reduction in allowable door leak rate, depending on the size of the facility and oven door height, and a 50 percent reduction in allowable leak rates for lids and offtakes for all sizes of facilities and ovens. The current leak limits and proposed revised leak limits are described in detail in section IV.D.3. of this preamble. Also, we are asking for comments on the proposed revised monitoring techniques for leaks from HNR ovens. These proposed changes are discussed in sections 3. and 4. below. To further address fugitive emissions at the Coke Oven Batteries facilities, we are proposing a requirement for fenceline monitoring for benzene along with an action level for benzene (as a surrogate for coke oven emissions (COE)) and a requirement for root cause analysis and corrective actions if the action level is exceeded. These proposed requirements are discussed in section 5. below.

Lastly, we are proposing a revised equation for estimating leaks from ByP coke oven doors based on evaluating the historic equation developed from 1981 coke oven data. The discussion of this issue is in section 6. below.

1. ByP Battery Stack 1-Hour Standards

We are considering whether an additional 1-hour battery stack standard is warranted to support the current 24-hour average ByP battery stack standard in Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP so as to identify short-term periods of high opacity that are not identified from the current rule's requirement for a 24-hour opacity average. Battery 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.

We acquired 1-hour battery stack opacity data as part of the 2022 CAA section 114 test request and also obtained information about work practices that are performed on ovens to maintain oven integrity, which minimizes battery stack opacity, in general. We are not proposing a 1-hour limit in this proposed action because of the processing of large quantities of data that would be needed to develop a 1-hour emissions limit for all coke facilities and also to analyze oven wall work practices reported by coke facilities in the CAA section 114 request responses to see if there is a correlation between the work practices and lower opacities in the 1-hour time data. Therefore, we are soliciting comment and information regarding these issues, including comments regarding whether or not the EPA should finalize a 1-hour battery stack opacity standard in the NESHAP in addition to or in lieu of the current standard that is a 24-hour average, and an explanation as to why or why not; and what work practices would reduce high opacity on an hourly basis. The 1-hour opacity and work practice data collected as part of the 2022 CAA section 114 request are summarized in a memorandum titled *Preliminary Analysis and Recommendations for Coke Oven Combustion Stacks, Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC)* [31] that graphically shows the 1-hour data, located in the docket to this rule.

[31] *Preliminary Analysis and Recommendations for Coke Oven Combustion Stacks, Technology Review for NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC).* J. Carpenter, U.S. Environmental Protection Agency Region IV, Atlanta, GA; K. Healy, U.S. Environmental Protection Agency, Region V; D.L. Jones, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, and G.E. Raymond, RTI International. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1, 2023.

2. Soaking Emissions From ByP Coke Ovens

The Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP regulates soaking COE from coke ovens via work practice standards. Under 40 CFR 63.7294, coke oven facilities must prepare and operate according to a written work practice plan for soaking emissions. The plan must include measures and procedures to identify soaking COE that require corrective actions, such as procedure for dampering off ovens; determining why soaking COE emissions do not ignite automatically and, if not, then to manually do so; 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.

Soaking, for the purposes of the NESHAP, means the period in the coking cycle that starts when an oven is dampered off the collecting main and vented to the atmosphere through an open standpipe prior to pushing, and ends when the coke begins to be pushed from the oven. Visible soaking COE occur from the discharge of COE via open standpipes during the soaking period due to either incomplete coking or leakage into the standpipe from the collecting main.

We are asking for comments on the feasibility of capturing and controlling soaking COE. Soaking COE are most pronounced with ''green'' coke, *i.e.,* coke that has not completed the coking process. Work practice standards for soaking, covered in 40 CFR 63.7294, do not include opacity limits or control device requirements and rely on subjective observations from facility personnel. Furthermore, operational practices may prevent topside workers from seeing soaking COE, which is a prerequisite for the current soaking work practice standards to apply. Currently, EPA Method 303A observations do not consider soaking COE because intentional standpipe cap opening during pushing is not considered a leak from the oven and, therefore, is not included in the visible emissions observation field for oven testing.

We are asking for estimates of COE from soaking to better understand the scope and scale of these emissions. In addition, we are asking for comments on options for capturing and controlling the soaking COE using a secondary collecting main that routes standpipe COE exhaust to a control device with or without an associated VE, opacity, or emissions limit. We are not proposing controls or an opacity limit in this current action; however, we solicit comment and information regarding soaking COE, including comments as to whether or not the EPA should include such a standard in the NESHAP in the final rule and an explanation as to why or why not. We also solicit comments on changes to the soaking work practice requirements currently in the rule.

3. ByP Door, Lids, and Offtakes Leak Limits

Due to improvements in leak control at coke oven facilities, we are proposing to lower the door leak limits in the NESHAP under the technology review for the Coke Oven Batteries source category for both MACT track and LAER track ByP coke facilities. We are proposing for facilities with coke production capacity of more than 3 million tpy coke to lower the allowable leaking door limit from the current limit of 4 percent to 1.5 percent for tall leaking doors (63 percent reduction) and from 3.3 percent to 1.0 percent for ''not tall'' leaking doors (70 percent reduction), in leaks as observed from the yard. These proposed standards would currently only apply to the U.S. Steel Clairton facility. For Coke Oven Batteries facilities that have coke production capacity less than 3 million tpy coke, we are proposing an allowable leaking door limit of 3.0 percent leaking doors observed from the yard for all sizes of doors (currently the NESHAP includes limits of 4.0 and 3.3 percent allowable leaking doors for tall and not tall doors, respectively, as described earlier in this preamble), a 25 and 9 percent reduction, respectively. Both proposed changes to the allowable limits would ensure continued low emissions from leaking doors. These reduced levels reflect improvements in performance of the facilities to minimize leaks from doors.

Due to improvements in operation by the coke facilities, where actual emissions are much lower than allowable limits in many cases, we also are proposing to lower the lid and offtake leak allowable limits in the NESHAP under the technology review for the Coke Oven Batteries source category. The current NESHAP includes limits of 0.4 percent leaking lids and 2.5 percent leaking offtakes. We are proposing a revised leaking lid limit of 0.2 percent leaking lids and for offtakes a limit of 1.2 percent leaking offtakes (both an approximately 50 percent reduction). Both proposed changes to the limits would ensure continued low emissions from leaking lids and offtakes. These reduced levels reflect improvements in performance of the facilities to minimize leaks from lids and offtakes.

Table 9 shows the estimated allowable emissions (tpy) before and after lowering the leak limits from doors, lids, and offtakes for each of eight ByP facilities.

TABLE 9—ESTIMATED ALLOWABLE EMISSIONS BEFORE AND AFTER PROPOSED CHANGES TO THE LEAK LIMITS FOR LEAKING DOORS, LIDS, AND OFFTAKES AT BYPRODUCT COKE OVEN FACILITIES

[Coke oven batteries NESHAP]

Facility ID	Allowable emissions (tpy)							
	With current leak limits				With proposed leak limits			
	Doors[a b] (%)	Lids (%)	Offtakes (%)	Total (tpy)	Doors[c] (%)	Lids (%)	Offtakes (%)	Total (tpy)
ABC-Tarrant-AL	3.4	0.076	0.11	3.6	3.0	0.038	0.052	3.1
BLU-Birmingham-AL	3.1	0.079	0.099	3.3	2.7	0.039	0.047	2.8
CC-Follansbee-WV	5.5	0.12	0.25	5.9	5.1	0.059	0.12	5.2
CC-Middletown-OH	1.8	0.030	0.12	2.0	1.7	0.015	0.060	1.8
CC-BurnsHarbor-IN	4.3	0.086	0.13	4.5	3.7	0.043	0.065	3.8
CC-Monessen-PA	1.3	0.029	0.092	1.4	1.3	0.015	0.044	1.3
CC-Warren-OH	2.0	0.034	0.14	2.2	1.9	0.017	0.067	2.0
EES-RiverRouge-MI	2.2	0.045	0.14	2.4	1.9	0.022	0.067	2.0
USS-Clairton-PA	17	0.38	1.1	19	11	0.19	0.53	12
Total	41	0.88	2.2	44	33	0.44	1.0	34

[a] Door emissions are calculated using the revised equation. See section IV.D.6. of this preamble.

[b] For doors, two limits apply in the current rule: 4 percent leaking doors for tall ovens (equal to or greater than 6 meters or 29 feet) and 3.3 percent leaking doors for all other shorter ovens (less than 6 meters).

[c] For facilities with coke production capacity more than 3 million tpy coke, proposed limits from doors are 1.5 percent leaking doors for tall ovens and 1.0 percent leaking doors for all other shorter ovens; for facilities with coke production capacity less than 3 million tpy coke, proposed limits from doors is 3.0 percent leaking doors for all doors sizes.

We are asking for comment on these proposed limits and whether there are other methods available to reduce leaks from doors, lids, and offtakes, and from charging at coke oven batteries that are not discussed here. Additional information on the available methods is included in the memorandum *Technology Review for the Coke Ovens: Pushing, Quenching, and Battery Stack and Coke Oven Batteries Source Categories*[32] (hereafter referred to as the Technology Review Memorandum), located in the dockets for the rules.

4. HNR Oven Door Leaks

a. HNR Leak-Related Monitoring

We are revising the Coke Oven Batteries NESHAP for new and existing HNR doors (40 CFR 63.303(a)(1) and (b)(1)) to require both monitoring of leaking doors at HNR facilities using EPA Method 303A, which relies on observing VE emanating from the ovens, and monitoring pressure in the ovens (and common tunnel), instead of choosing one or the other, as the current rule allows. We also are adding the requirement to measure pressure in the ovens during the main points in the entire oven cycle to include, at minimum, during pushing, coking, and charging (but not necessarily continuously throughout the oven cycle). We are asking for comment on these changes.

b. Alternative Monitoring Approaches—HNR Oven Doors

The current method of assessing HNR oven doors for leaks under the Coke Oven Battery NESHAP (40 CFR

[32] *Technology Review for the Coke Ovens: Pushing, Quenching, and Battery Stack and Coke Oven Batteries Source Categories.* D.L. Jones, U.S. Environmental Protection Agency, and G.E. Raymond, RTI International U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. May 1, 2023. Docket ID Nos. EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051.

63.303(b)) is through the use of EPA Method 303 or 303A, methods based on observing VE emanating from the ovens and seen with the unaided eye, excluding steam or condensing water, by trained human observers. While VE has been used as an effective surrogate for monitoring door leaks in the past, especially for ByP facilities, the EPA is soliciting comments on whether there are other surrogates or practices which could be applied to HNR door leaks. For those alternative techniques that could be applied to measuring door leaks, the EPA is soliciting information on equivalency studies that have been performed against Method 303 and/or 303A, and any potential training requirements and/or associated monitoring procedures for the alternative techniques.

c. Use of Pressure Transducers—HNR Ovens and Common Tunnels

As discussed earlier in this preamble, monitoring pressure in the ovens and common tunnel to establish negative oven pressure and establish leaks of 0.0 for HNR doors currently is allowed as an alternate method to observing leaks with EPA Method 303A under 40 CFR 63.303(b). We are proposing to require both methods, EPA Method 303A and pressure monitoring, to establish negative pressure in the ovens and 0.0 leaks. The current practice at HNR facilities is to operate one pressure monitor per common tunnel that may connect to 15 to 20 ovens and is, therefore, not very sensitive to pressure loss at one oven. Despite leaking emissions in one oven, a common tunnel with one pressure transducer may still show negative pressure within the tunnel. Also, facilities often only have one pressure transducer per oven, which might not be sufficient to monitor and establish negative pressure. We are considering a requirement for HNR facilities to develop and submit a monitoring plan to their delegated authority to ensure that there are sufficient pressure monitors in the ovens and common tunnels to be able to determine that all ovens are operated under negative pressure. We are not proposing this requirement at this time, however we are soliciting comment on this potential requirement and whether the EPA should allow each facility to suggest a site-specific number of monitors needed as part of the monitoring plan that they submit to the delegated authority for review and approval or whether EPA should establish a prescriptive minimum number of pressure monitors for each of the ovens and common tunnels in the NESHAP.

5. Fenceline Monitoring

We are proposing a fenceline monitoring work practice standard (for benzene, as a surrogate for COE) under the technology review for the Coke Oven Batteries source category. Fenceline monitoring refers to the placement of monitors along the perimeter of a facility to measure fugitive pollutant concentrations. The fenceline monitoring work practice standard would require owners and operators to monitor for benzene, as a surrogate for COE, and conduct root cause analysis and corrective action upon exceeding an annual average concentration action level of benzene. Details regarding the proposed requirements for fenceline monitoring, the action level, and root cause analysis and corrective action are discussed in this section.

The EPA recognizes that, in many cases, it is impractical to directly measure emissions from fugitive emission sources at coke manufacturing facilities. Direct measurement of fugitive emissions can be costly and difficult. The EPA is concerned about the potential magnitude of emissions from fugitive sources and the difficulty in monitoring actual fugitive emission levels.

To improve our understanding of fugitive emissions and to potentially address fugitive emissions sources at coke facilities, we required fenceline monitoring for benzene and several other HAP through the 2022 CAA section 114 request that is described in section II.C. of this preamble. In the 2022 CAA section 114 requests, five selected facilities (four ByP facilities and 1 HNR facility) were required to perform sampling using EPA Methods 325A/B for benzene, toluene, ethylbenzene, xylenes, and 1,3 butadiene and Compendium Methods TO–13A and TO–15A for VOC and PAHs to determine the facility fugitive HAP concentrations at the fenceline and interior on-site facility grounds.

At the fenceline, facilities were required to sample for six months (thirteen 14-day sampling periods) (24 hours per day) at monitoring locations determined by EPA Method 325A, for a combined total of 182 days of sampling with analysis by EPA Method 325B. Facilities were also required to collect seven 24-hour samples at each fenceline TO monitor location for a total of at least 21 samples (3×7) for TO–13A and at least 28 samples (4×7) of TO–15A. In addition to fenceline monitoring, facilities were required to sample fugitive emissions within the interior facility grounds using methods TO–13A and 15A. Facility interior samples were collected at one location at the HNR facility and two locations at the ByP facilities for seven 24-hour periods at each location resulting in a total of 7 TO–13A and TO–15A samples at the HNR facility and 14 (2 times 7) TO–13A and TO–15A samples at each ByP facility.

The requirements and decisions that we are proposing in this action are informed by the fenceline monitoring results reported by facilities in response to the 2022 Coke Ovens CAA section 114 request, consideration of dispersion modeling results, and consideration of the uncertainty with estimating emissions from fugitive emission sources. Based on the monitoring results and the other considerations, we determined that it is appropriate under CAA section 112(d)(6) to require coke oven facilities to monitor, and if necessary, take corrective action to minimize fugitive emissions, to ensure that facilities appropriately limit emissions of HAP from fugitive sources. More specifically, in this action, we are proposing that benzene concentrations be monitored at the fenceline of each coke oven facility using EPA Methods 325A/B. For each 2-week time-integrated sampling period, the facility would determine a delta c, calculated as the lowest benzene sample value subtracted from the highest benzene sample value. This approach is intended to subtract out the estimated contribution from background emissions that do not originate from the facility. The delta c for the most recent year of samples (26 sampling periods) would be averaged to calculate an annual average delta c. The annual average delta c would be determined on a 12-month rolling basis, meaning that it is updated with every new sample (*i.e.,* every 2 weeks a new annual average delta c is determined from the most recent 26 sampling periods). This rolling annual average delta c would be compared against a benzene action level and owners and operators would be required to conduct root cause analysis and corrective action upon exceeding the benzene action level.

We are proposing an action level of 3 ug/m^3 benzene. The proposed action level was determined by modeling fenceline benzene concentrations using the benzene emissions inventories used in the facility-wide risk assessment, assuming that those reported emissions represented full compliance with all standards, adjusted for additional control requirements we are proposing in this action.

After modeling each facility, we then selected the maximum annual average benzene fenceline concentration modeled at any facility as the benzene action level. Thus, if the reported inventories are accurate, all facilities should be able to meet the benzene fenceline concentration action level. We note that this analysis does not correlate to any particular metric related to risk. This approach would provide the owner or operator with the flexibility to determine how best to reduce HAP emissions to ensure the benzene levels remain below the fenceline concentration action level. The details of this proposed approach are set forth in more detail in this section.

a. Siting, Design, and Sampling Requirements for Fenceline Monitors

The EPA is proposing that passive fenceline monitors collecting 2-week time-integrated samples be deployed to measure fenceline benzene concentrations at coke oven facilities. We are proposing that coke oven facilities deploy passive samplers at a minimum of 12 points circling the coke oven facility perimeter according to EPA Method 325A.

Fenceline passive diffusive tube monitoring networks employ a series of diffusive tube samplers at set intervals along the fenceline to measure a time-integrated [33] ambient air concentration at each sampling location. A diffusive tube sampler consists of a small tube filled with an adsorbent, selected based on the pollutant(s) of interest, and capped with a specially designed cover with small holes that allow ambient air to diffuse into the tube at a small, fixed rate. Diffusive tube samplers have been demonstrated to be a cost-effective, accurate technique for measuring concentrations of pollutants (*e.g.,* benzene) resulting from fugitive emissions in a number of studies [34] [35] as well as in the petroleum refining sector.[36] In addition, diffusive samplers are used in the European Union to monitor and maintain air quality, as described in European Union directives 2008/50/EC and Measurement Standard EN 14662–4:2005 for benzene. The International Organization for Standardization developed a standard method for diffusive sampling (ISO/FDIS 16017–2).

We are proposing that the highest concentration of benzene, as an annual rolling average measured at any individual monitor and adjusted for background (see ''*Adjusting for background benzene concentrations*'' in this section), would be compared against the concentration action level (of 3 ug/m^3) in order to determine if there are significant excess fugitive emissions that need to be addressed. We are proposing that existing sources would need to deploy samplers no later than 1 year after the effective date of the final rule which will enable facilities to begin generating annual averages after 2 years, and then within 3 years of the effective date the facilities would need to demonstrate that they meet the action level or would need to conduct the root cause analyses and corrective actions. New facilities would be required to deploy samplers by the effective date of the final rule or startup, whichever is later, and generate the first annual average 1 year later. We are proposing that coke oven facility owners and operators would be required to demonstrate compliance with the concentration action level for the first time 3 years following the date the final rule is published in the **Federal Register**, and thereafter on a 1-year rolling annual average basis (*i.e.,* considering results from the most recent 26 consecutive 2-week sampling intervals and recalculating the average every 2 weeks).

b. Benzene as an Appropriate Target Analyte

Passive diffusive tube monitors can be used to determine the ambient concentration of a large number of compounds. However, different sorbent materials are typically needed to collect compounds with significantly different properties. Rather than require multiple tubes per monitoring location and a full analytical array of compounds to be determined, which would significantly increase the cost of the proposed fenceline monitoring program, we are proposing that the fenceline monitors be analyzed specifically for benzene. Coke oven facility owners or operators may elect to do more detailed speciation of the air at the fenceline, which could help identify the process unit that may be contributing to a high fenceline concentration, but we are only establishing monitoring requirements and action level requirements for benzene. We consider benzene to be a surrogate for organic HAP from fugitive sources at coke ovens facilities for multiple reasons. First, benzene is ubiquitous at coke oven facilities since it accounts for about 70 percent of all volatile compounds in the fenceline volatile emissions. Benzene is also present in emissions from CBRPs, where benzene is recovered from coke oven gas for sale along with other coke oven gas components. Second, 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. According to the emissions inventory we have relied on for this proposed action, 38 percent of benzene emissions from coke oven facilities result from fugitive emissions from coke batteries and CBRP equipment. See the emission inventory description in the document *Residual Risk Assessment for Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule,*[8] and the memorandum titled *Fugitive Monitoring at Coke Oven Facilities* (hereafter referred to as the *Fugitive Monitoring* memorandum),[37] located in the dockets for the rules. Lastly, benzene is present in nearly all coke oven facility equipment exhaust. Therefore, the presence of benzene at the fenceline is also an indicator of other HAP emitted as part of COE or gas that is derivative of COE. For this reason and the reasons discussed earlier in this section, we believe that benzene is the most appropriate pollutant to monitor.

We believe that other compounds, such as naphthalene and other PAH, would be less suitable indicators of total fugitive HAP for a couple of reasons. First, they are prevalent in stack emissions as well as fugitive emissions, so there is more potential for fenceline monitors to pick up contributions from nonfugitive sources. In contrast, almost

[33] Time-integrated sampling refers to the collection of a sample at a controlled rate over a period of time. The sample then provides an average concentration over the sample period. For the diffusive tube samplers, the controlled sampling rate is dictated by the uptake rate, which is the amount of a compound that can be absorbed by a particular sorbent over time during the sampling period.

[34] McKay, J., M. Molyneux, G. Pizzella, V. Radojcic. *Environmental Levels of Benzene at the Boundaries of Three European Refineries,* prepared by the CONCAWE Air Quality Management Group's Special Task Force on Benzene Monitoring at Refinery Fenceline (AQ/STF–45), Brussels, June 1999.

[35] Thoma, E.D., M.C. Miller, K.C. Chung, N.L. Parsons, B.C. Shine. 2011. Facility Fenceline Monitoring using Passive Sampling, J. Air & Waste Manage Assoc. 61: 834–842.

[36] See EPA–HQ–OAR–2010–0682; fenceline concentration data collected for the petroleum refining sector rulemaking can be accessed via the Benzene Fenceline Monitoring Dashboard at *https://awsedap.epa.gov/public/extensions/Fenceline_Monitoring/Fenceline_Monitoring.html?sheet=MonitoringDashboard.*

[37] *Fugitive Monitoring at Coke Oven Facilities.* D.L. Jones, K. Boaggio, K. McGinn, and N. Shappley, U.S. Environmental Protection Agency; and G.E. Raymond, RTI International. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. July 1, 2023. Docket ID No. EPA–HQ–OAR–2003–0051).

all benzene comes from fugitive sources, so monitoring for benzene increases our confidence that the concentration detected at the fenceline is from fugitive emissions. Second, as compared to benzene, these other compounds are expected to be present at lower concentrations and, therefore, would be more difficult to measure accurately using fenceline monitoring. We request comments on the suitability of selecting benzene or other HAP, including naphthalene and other PAH, as the indicator to be monitored by fenceline samplers. We also request comment on whether it would be appropriate to require multiple HAP to be monitored at the fenceline, considering the capital and annual cost for additional monitors that are not passive/diffusion type, and if so, which pollutants should be monitored.

c. Adjusting for Background Benzene Concentrations

Under this proposed approach, absolute measurements along a facility fenceline cannot completely characterize which emissions are associated with the coke oven facility and which are associated with other background sources outside the facility fenceline. The EPA recognizes that sources outside the coke oven facility boundaries may influence benzene levels monitored at the fenceline. Furthermore, background levels driven by local upwind sources are spatially variable. Both of these factors could result in inaccurate estimates of the actual contribution of fugitive emissions from the facility itself to the concentration measured at the fenceline. Many coke oven facilities are located in industrial areas that include facilities in other industries that also may emit benzene. With this spatial positioning, there is a possibility that the local upwind neighbors of a coke oven facility could cause different background levels on different sides of the coke oven facility.

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. We solicit comment on alternative approaches for making these adjustments for off-site contributions to the fenceline concentration of benzene.

d. Concentration Action Level

As mentioned above, the EPA is proposing to require coke oven facilities to take corrective action to reduce fugitive emissions if monitored fenceline concentrations exceed a specific concentration action level on a rolling annual average basis (recalculated every two weeks). We selected this proposed fenceline action level by modeling fenceline benzene concentrations using the benzene emissions estimates reported in response to the 2016 and 2022 CAA section 114 requests and estimated benzene emissions in the 2017 NEI for the CRBPs (see the model file description in *Residual Risk Assessment for Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category in Support of the 2023 Risk and Technology Review Proposed Rule).* 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 $\mu g/m^3$ (annual average). For additional details of the analysis, see the *Fugitive Monitoring* memorandum.[37]

Due to differences in short-term meteorological conditions, short-term (*i.e.,* 2-week average) concentrations at the fenceline can vary greatly. Given the high variability in short-term fenceline concentrations and the difficulties and uncertainties associated with estimating a maximum 2-week fenceline concentration given a limited time period of meteorological data (one year) typically used in the modeling exercise, we determined that it would be inappropriate and ineffective to propose a short-term concentration action level that would trigger corrective action based on a single 2-week sampling event.

One objective for this monitoring program is to identify fugitive emission releases more quickly, so that corrective action can be implemented in a timelier fashion than might otherwise occur without the fenceline monitoring requirement. We conclude the proposed fenceline monitoring approach and a rolling annual average concentration action limit (*i.e.,* using results from the most recent 26 consecutive 2-week samples and recalculating the average every 2 weeks) would achieve this objective. The proposed fenceline monitoring would provide the coke oven facility owner or operator with fenceline concentration information once every 2 weeks. Therefore, the coke oven facility owner or operator would be able to timely identify emissions leading to elevated fenceline concentrations. We anticipate that the coke oven facility owners or operators would elect to identify and correct these sources early in efforts to avoid exceeding the annual benzene concentration action level.

An ''exceedance'' of the benzene concentration action level would occur when the rolling annual average delta c, exceeds 3 $\mu g/m^3$. Upon exceeding the concentration action level, we propose that coke oven facility owners or operators would be required to conduct analyses to identify sources contributing to fenceline concentrations and take corrective action to reduce fugitive emissions to ensure fenceline benzene concentrations remain at or below 3 $\mu g/m^3$ (rolling annual average).

e. Corrective Action Requirements

As described previously, the EPA is proposing that coke oven facility owners or operators analyze the fenceline samples and compare the rolling annual average delta c to the concentration action level. This section summarizes the root cause and corrective action requirements in this proposed rule. First, we are proposing that the calculation of the rolling annual average delta c must be completed within 30 days after the completion of each sampling episode. If the rolling annual average benzene delta c exceeds the proposed concentration action level (*i.e.,* 3 $\mu g/m^3$), the facility must, within 5 days of comparing the rolling annual delta c to the concentration action level, initiate a root cause analysis to determine the primary cause, and any other contributing cause(s), of the exceedance. The facility must complete the root cause analysis and implement corrective action within 45 days of initiating the root cause analysis. We are not proposing specific controls or corrections that would be required when the concentration action level is exceeded because the cause of an exceedance could vary greatly from facility to facility and episode to episode since many different sources emit fugitive emissions. Rather, we are proposing to allow facilities to determine, based on their own analysis of their operations, the action that must be taken to reduce air concentrations at the fenceline to levels at or below the concentration action level, representing full compliance with Coke Oven Batteries NESHAP requirements for fenceline emissions until the next fenceline measurement.

If, upon completion of the root cause analysis and corrective actions described above, the coke oven facility subsequently exceeds the action level for the next two-week sampling episode following the earlier of the completion of a first set of corrective actions or the 45-day period commencing at initiation of root cause analysis (''subsequent exceedance''), the owner or operator would be required to develop and submit to the EPA a corrective action plan that would describe the corrective actions completed to date. This plan would include a schedule for implementation of additional emission reduction measures that the owner or operator can demonstrate as soon as practical. This plan would be submitted to the Administrator within 60 days after receiving the analytical results indicating that the delta c value for the 14-day sampling period following the completion of the initial corrective action is greater 3 $\mu g/m^3$, or if any corrective action measures identified require more than 45 days to implement, or, if no initial corrective actions were identified, no later than 60 days following the completion of the corrective action analysis.

The coke oven facility owner or operator is not deemed out of compliance with the proposed concentration action level at the time of the fenceline concentration determination provided that the appropriate corrective action measures are taken according to the timeframe detailed in an approved corrective action plan.

The EPA requests comment on whether it is appropriate to establish a standard time frame for compliance with actions listed in a corrective action plan.

We expect that facilities may identify ''poor-performing'' sources (*e.g.,* due to unusual or excessive leaks) using the fenceline monitoring data and, based on this additional information, would take action to reduce HAP emissions before they would have otherwise been aware of the issue through existing inspection and enforcement measures. By selecting a fenceline monitoring approach and by selecting benzene as the surrogate for COE, we believe that the proposed monitoring approach would effectively provide emissions information for all coke oven facility fugitive emission sources.

f. Additional Requirements of the Fenceline Monitoring Program

We are proposing that fenceline data at each monitor location be reported electronically for each quarterly period's worth of sampling periods (*i.e.,* each report would contain data for at least six 2-week sampling periods per quarterly period). These data would be reported electronically to the EPA within 45 days of the end of each quarterly period and would be made available to the public through the EPA's electronic reporting and data retrieval portal, in keeping with the EPA's efforts to streamline and reduce reporting burden and to move away from hard copy submittals of data where feasible. We are proposing that facilities be required to conduct fenceline monitoring on a continuous basis at all monitors, in accordance with the specific methods described above.

In light of the low annual monitoring and reporting costs associated with the fenceline monitors (as described in the next section), and the importance of the fenceline monitors as a means of ensuring the control of fugitives achieves the expected emission levels, we believe it is appropriate to require collection of fenceline monitoring data on a continuous basis. However, the EPA recognizes that fugitive benzene emissions at some monitors may be so low as to make it improbable that exceedances of the concentration action level would ever occur. In the interest of reducing the cost burden on facilities to comply with this rule, if a coke oven facility maintains the fenceline concentration below 0.3 ug/m^3 (a concentration that is 10 percent of the benzene action level) at any individual monitor for 2 years, the sampling frequency at that monitor can be reduced by 50 percent (*e.g.,* 2 weeks of sampling for every 4-week period). For each sample location and monitor that continues to register below 0.3 ug/m^3 for an additional 2 years, the sampling may be reduced further to approximately once per quarter, with sampling occuring every sixth two-week period (*i.e.,* five two-week periods are skipped between active sampling periods). If a monitor at the quarterly frequency continues to maintain a concentration of 0.3 ug/m^3 for an additional 2 years, sampling at that monitor may be reduced further to annual sampling. However, if the concentration at any sample location that is allowed a reduced frequency of testing increases above 0.3 ug/m^3 at any time, sampling would need to immediately return to the original continuous sampling requirement.

The EPA solicits comment on the proposed approach for reducing fenceline monitoring requirements for facilities that consistently measure fenceline concentrations below the concentration action level, and the measurement level that should be used to provide such relief. The proposed approach would be consistent with the fenceline alternate sampling frequency for burden reduction (40 CFR 63.658(e)(3)) as well as the graduated requirements for valve leak monitoring in Refinery MACT 1 [38] and other equipment leak standards, where the frequency of required monitoring varies depending on the percent of leaking valves identified during the previous monitoring period (See *e.g.,* 40 CFR 63.648(c). The EPA requests comment on the minimum time period facilities should be required to conduct fenceline monitoring; and the level of performance, in terms of monitored fenceline concentrations, that would enable a facility to reduce the frequency of data collection and reporting.

Total costs for fenceline monitoring are estimated to be $116,000 per year per facility including reporting and recordkeeping and $1.3M annually for the industry including reporting and recordkeeping (11 affected facilities). The EPA requests comment on these cost estimates.

6. Revised Emissions Equation for Leaking Doors

As part of the technology review under CAA section 112(d)(6), we are proposing to use an updated, revised version of the equation than that which has historically been used to estimate COE from leaking oven doors. The revised equation would provide more accurate estimates of COE from doors that reflects operation of any coke facility, not just the facility upon which the equation was derived, and includes facilities where advancements in preventing and reducing door leaks

[38] Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards Final Rule. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. 80 FR 75178. December 1, 2015.

have occurred since 1981, which is when the equation was first developed.

A summary of the revised equation and the rationale for its development follows here. A more detailed explanation can be found in the memorandum *Revised Equation to Estimate Coke Oven Emissions from Oven Doors,*[39] located in the dockets for these rules. We are asking for comment on the revised equation to estimate coke oven door leaks.

In the 2005 RTR for Coke Oven Batteries, COE from leaking oven doors were estimated using the following equation taken from the estimating procedures in AP–42 (section 12.2: Coke Production, revised draft, July 2001).[40]

$$\text{COE-doors (lb/hr)} = ND \times (PLD_{yard}/100) \times (0.04\ \text{lb/hr}^{41}) + ND \times (PLD_{bench}/100) \times (0.023\ \text{lb/hr}^{41})$$

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.

Because of safety concerns, observations are not typically taken from bench and, therefore, this equation has historically included a default value of 6 percent for the percent leaking doors only able to be observed from the bench. As reported in the July 2008 update to AP–42 Chapter 12.2,[42] this default value was derived from 1981 data, where the percent leaking doors from the yard was 6.4 percent and the total percent leaking doors visible from the bench was 12.4 percent, which included both leaks visible from yard and leaks visible only from the bench. The difference between 12.4 and 6.4 percent, equal to 6 percent, represented the percent leaking doors only able to be observed from the bench.

In the current coke industry, the percent leaking doors measured from the yard is much lower, 2.5 percent or less, based on 2016 and 2022 source tests performed for the CAA section 114 request. The facility that was used in 1981 to establish the 6 percent leaking doors that were visible only from the bench was U.S. Steel Clairton-PA, which had 6.4 percent leaking doors visible from the yard at that time but now has a facility average of 0.54 percent leaking doors visible from the yard based on 2016 data and facility average of 0.46 percent leaking doors visible from the yard based on 2021 data. The default fixed value of 6 percent leaking doors visible only from the bench obviously does not reflect changes in practices for door leaks in the years since 1981 and should be reevaluated so that the total emissions from doors are not overestimated.

Consequently, for the analyses conducted for this proposed rule, we revised the equation to include a bench-to-yard ''ratio'' instead of the 6 percent default value for doors seen leaking from the bench in the door leak emissions equation. The revised value in the equation (*i.e.,* adjustment ratio) is still based on the historic values measured in 1981 but instead of using the 6 percent default value, the equation includes the ratio of the 1981 value for percent leaking doors visible only from the bench to the 1981 value for percent leaking doors visible from the yard. This adjustment ratio was used with current measured percent leaking doors from the yard to estimate the current percent leaking doors visible only from the bench. The ratio of bench-only emissions to yard emissions from 1981 is ((12.4 − 6.4)/6.4), equal to 6.0/6.4 or 0.94. The adjustment ratio (0.94) was multiplied by measured data for percent leaking doors measured from the yard to estimate the bench-only component of door emissions in the equation for COE for doors. Use of this adjustment ratio in the revised equation below is being proposed to better reflect operation of all coke ovens:

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

As part of the 2022 CAA section 114 request, we requested two coke oven facilities to perform EPA Method 303 tests simultaneously from both the bench and the yard at two batteries at each facility. However, we did not receive the data until after preparation of this proposal preamble (data received on June 27, 2023). The EPA intends to complete analysis of these data in time to address in the final rule. The facility test reports from the recent method 303 door leak testing are included in the docket for the proposed rule. We solicit comments regarding the results of these method 303 tests and how those results could affect the door leak equation discussed in this section.

E. What other actions are we proposing?

In addition to the proposed actions described above, we are proposing additional revisions to these NESHAP. We are proposing revisions to the startup, shutdown, and malfunction (SSM) provisions of these rules in order to ensure that they are consistent with the decision in *Sierra Club* v. *EPA,* 551 F. 3d 1019 (D.C. Cir. 2008), in which the court vacated two provisions that exempted sources from the requirement to comply with otherwise applicable CAA section 112(d) emission standards during periods of SSM. We also are proposing electronic reporting. Our analyses and proposed changes related to these issues are discussed as follows.

1. SSM

In its 2008 decision in *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008), the United States Court of Appeals for the District of Columbia Circuit (the court) vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM. Specifically, the court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), holding that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature and that the SSM exemption violates the CAA's requirement that some CAA section 112 standards apply continuously.

With the issuance of the mandate in *Sierra Club* v. *EPA,* the exemptions that were in 63.6(f)(1) and (h)(1) are null and void. The EPA amended 40 CFR 63.6(f)(1) and (h)(1)) on March 11, 2021, to reflect the court order and correct the CFR to remove the SSM exemption.[43] In this action, we are eliminating any cross-reference to the vacated provisions in the regulatory text including 40 CFR 63.7310(a) and Table 1 of the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP and 40 CFR 63.300(e) and 63.310 for the Coke Oven Batteries NESHAP. Consistent with *Sierra Club* v. *EPA,* we are proposing standards in these rules that apply at all times. We are also proposing several revisions to Table 1 of the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP (the General Provisions applicability table) as is explained in more detail below.

[39] *Revised Equation to Estimate Coke Oven Emissions from Oven Doors.* D.L. Jones and K. McGinn. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. August 2021. Docket ID Nos. EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051.

[40] Compilation of Emission Factors (AP–42). Section 12.2, Coke Production. See *https://www3.epa.gov/ttn/chief/old/ap42/ch12/s02/final/c12s02.pdf.*

[41] Emission factors for leaks from yard (0.04 lb/hr) and bench (0.023 lb/hr) developed from 1981 coke facility data and reported in AP–42.[40]

[42] See Emission Factor Documentation for AP–42, Section 12.2 Coke Production Final Report, May 2008. Chapter 6, Summary of Comments and Response for the July 2001 Draft. Response A–3. pg. 6–5. *https://www3.epa.gov/ttnchie1/ap42/ch12/bgdocs/b12s02_may08.pdf.*

[43] U.S. EPA, *Court Vacatur of Exemption From Emission Standards During Periods of Startup, Shutdown, and Malfunction.* (86 FR 13819, March 11, 2021).

For example, we are proposing to eliminate the incorporation of the General Provisions' requirement that the source develop an SSM plan. We also are proposing to eliminate and revise certain recordkeeping and reporting requirements related to the SSM exemption as further described as follows.

The EPA has attempted to ensure that the provisions we are proposing to eliminate are inappropriate, unnecessary, or redundant in the absence of the SSM exemption. We are specifically seeking comment on whether we have successfully done so.

In proposing the standards in this rule, the EPA has taken into account SS periods and, for the reasons explained as follows, has not proposed alternate standards for those periods. The coke oven industry has not identified (and there are no data indicating) any specific problems with removing the SSM provisions due to the nature of the coke process to operate continuously. If an oven is shut down, it has to be rebuilt before starting back up, which is the reason why coke ovens are put in idle mode when not operating. However, we solicit comment on whether any situations exist where separate standards, such as work practices, would be more appropriate during periods of startup and shutdown rather than the current standard.

Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead they are, by definition, sudden infrequent and not reasonably preventable failures of emissions control, process, or monitoring equipment (40 CFR 63.2) (definition of malfunction). The EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards and this reading has been upheld as reasonable by the court in *U.S. Sugar Corp.* v. *EPA,* 830 F.3d 579, 606–610 (2016). Therefore, the standards that apply during normal operation apply during periods of malfunction.

a. General Duty

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.6(e)(1)(i) and including a ''no'' in column 3 and revising 40 CFR 63.7310(c) text. In 40 CFR 63.6(e)(1)(i), the general duty to minimize emissions is described. Some of the language in that section is no longer necessary or appropriate in light of the elimination of the SSM exemption. With the elimination of the SSM exemption, there is no need to differentiate between normal operations, startup and shutdown, and malfunction events. Therefore, the language the EPA is proposing to revise for 40 CFR 63.7310(c) does not include that language from 40 CFR 63.6(e)(1). The EPA is also proposing to revise 40 CFR 63.300(e) in the Coke Oven Batteries NESHAP to reflect the elimination of the SSM exemption.

We are also proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.6(e)(1)(ii) and including a ''no'' in column 3. In 40 CFR 63.6(e)(1)(ii), requirements are imposed that are not necessary with the elimination of the SSM exemption or are redundant with the general duty requirement being added at 40 CFR 63.7310(a). The EPA is also proposing to revise 40 CFR 63.300(e) in Coke Oven Batteries NESHAP to reflect the elimination of the SSM exemption.

b. SSM Plan

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.6(e)(3) and including a ''no'' in column 3. Generally, the paragraphs under 40 CFR 63.6(e)(3) require development of an SSM plan and specify SSM recordkeeping and reporting requirements related to the SSM plan. The EPA is also proposing to revise 40 CFR 63.310(b) in 40 CFR part 63, subpart L to reflect the elimination of the SSM plan requirements. With the elimination of the SSM exemptions, affected units would be subject to an emission standard during such events. The applicability of a standard during such events would ensure that sources have ample incentive to plan for and achieve compliance and thus, the SSM plan requirements are no longer necessary.

c. Compliance With Standards

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.6(f)(1) and including a ''no'' in column 3. Consistent with *Sierra Club,* EPA amended 40 CFR 63.6(f)(1) and (h)(1) on March 11, 2021, to reflect the court order and correct the CFR to remove the SSM exemption. However, the second sentence of 40 CFR 63.6(f)(1) contains language that is premised on the existence of an exemption and is inappropriate in the absence of the exemption. Thus, rather than cross-referencing 63.6(f)(1), we are adding the language of 63.6(f)(1) that requires compliance with standards at all times to the regulatory text at 40 CFR 63.7310(a). The EPA is also proposing to revise 40 CFR 63.300(e) in Coke Oven Batteries NESHAP: to reflect that standards apply at all times.

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.6(h)(1) and including a ''no'' in column 3. Consistent with *Sierra Club,* EPA amended 40 CFR 63.6(h)(1) on March 11, 2021, to reflect the court order and correct the CFR to remove the SSM exemption. However, the second sentence of 40 CFR 63.6(f)(1) contains language that is premised on the existence of an exemption and is inappropriate in the absence of the exemption. Thus, rather than cross-referencing 63.6(f)(1), we are adding the language of 63.6(f)(1) that requires compliance with standards at all times to the regulatory text at 40 CFR 63.7310(a). The EPA is also proposing to revise 40 CFR 63.300(e) in Coke Oven Batteries NESHAP to reflect that standards apply at all times.

d. Performance Testing

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.7(e)(1) and including a ''no'' in column 3 and revising 40 CFR 63.7336(b) text. In 40 CFR 63.7(e)(1) performance testing is required. The EPA is instead proposing to add a performance testing requirement at 40 CFR 63.7322(a), 63.7324(a), and 63.7325(a). In addition, we are revising 40 CFR 63.309(a) and removing the citation to 40 CFR 63.7(e)(1) from 40 CFR 63.309(k). The performance testing requirements we are proposing to add differ from the General Provisions performance testing provisions in several respects. The regulatory text does not include the language in 40 CFR 63.7(e)(1) that restated the SSM exemption and language that precluded startup and shutdown periods from being considered ''representative'' for purposes of performance testing. The revised performance testing provisions require testing under representative operating conditions and exclude periods of startup and shutdown.

As in 40 CFR 63.7(e)(1), performance tests conducted under these subparts should not be conducted during malfunctions because conditions during malfunctions are often not representative of normal operating conditions. The EPA is proposing to add language that requires the owner or operator to record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. In 40 CFR 63.7(e), the owner or operator is required to make available to the Administrator such records ''as may be necessary to determine the condition of the performance test'' available to the Administrator upon request but does not specifically require the information to be recorded. The regulatory text the EPA is proposing to add to this provision builds on that requirement and makes explicit the requirement to record the information.

e. Monitoring

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding entries for 40 CFR 63.8(c)(1)(i) and (iii) and including a ''no'' in column 3. The cross-references to the general duty and SSM plan requirements in those subparagraphs are not necessary in light of other requirements of 40 CFR 63.8 that require good air pollution control practices (40 CFR 63.8(c)(1)) and that set out the requirements of a quality control program for monitoring equipment (40 CFR 63.8(d)). In addition, the EPA is proposing to revise 40 CFR 63.305(f)(4)(i) in Coke Oven Batteries NESHAP to reflect changes to General Provisions due to general duty and SSM.

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.8(d)(3) and including a ''no'' in column 3. The final sentence in 40 CFR 63.8(d)(3) refers to the General Provisions' SSM plan requirement which is no longer applicable. The EPA is proposing to add to the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP at 40 CFR 63.7342(b)(3) text that is identical to 40 CFR 63.8(d)(3) except that the final sentence is replaced with the following sentence: ''The program of corrective action should be included in the plan required under § 63.8(d)(2).'' We note that the revisions to 40 CFR 63.305(f)(4)(i) in Coke Oven Batteries NESHAP will also comport to this change.

f. Recordkeeping

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP Applicability table (Table 1) by adding an entry for 40 CFR 63.10(b)(2)(i) and including a ''no'' in column 3. In 40 CFR 63.10(b)(2)(i), the recordkeeping requirements during startup and shutdown are described. In addition, the EPA is proposing to revise 40 CFR 63.311(f) in Coke Oven Batteries NESHAP. These recording provisions are no longer necessary because the EPA is proposing that recordkeeping and reporting applicable to normal operations would apply to startup and shutdown. In the absence of special provisions applicable to startup and shutdown, such as a startup and shutdown plan, there is no reason to retain additional recordkeeping for startup and shutdown periods.

We are proposing to revise Table 1 of Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP by adding an entry for 40 CFR 63.10(b)(2)(ii) and including a ''no'' in column 3. In 40 CFR 63.10(b)(2)(ii), the recordkeeping requirements during a malfunction are described. The EPA is proposing to revise and add such requirements to 40 CFR 63.7342(a)(2)–(4). We are also revising the 40 CFR 63.311(f) to update the recordkeeping requirements in Coke Oven Batteries NESHAP. The regulatory text we are proposing to add differs from the General Provisions and other regulatory text it is replacing in that these provisions requires the creation and retention of a record of the occurrence and duration of each malfunction of process, air pollution control, and monitoring equipment. The EPA is proposing that this requirement apply to all malfunction events requiring that the source record the date, time, cause, and duration of the malfunction and report any failure to meet the standard. The EPA is also proposing to add to 40 CFR 63.7342(a)(3) and 40 CFR 63.311(f)(1)(iv) a requirement that sources keep records that include a list of the affected source or equipment and actions taken to minimize emissions, whether the failure occurred during a period of SSM, an estimate of the quantity of each regulated pollutant emitted over the standard for which the source failed to meet the standard, and a description of the method used to estimate the emissions. Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available, or engineering judgment based on known process parameters. The EPA is proposing to require that sources keep records of this information to ensure that there is adequate information to allow the EPA to determine the severity of any failure to meet a standard, and to provide data that may document how the source met the general duty to minimize emissions when the source has failed to meet an applicable standard.

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.10(b)(2)(iv) and including a ''no'' in column 3. The EPA is proposing to revise 40 CFR 63.311(f) in the Coke Oven Batteries NESHAP. When applicable, the provision requires sources to record actions taken during SSM events when actions were inconsistent with their SSM plan. The requirement is no longer appropriate because SSM plans would no longer be required. The requirement previously applicable under 40 CFR 63.10(b)(2)(iv)(B) to record actions to minimize emissions and record corrective actions is now applicable by reference to 40 CFR 63.7342(a)(4) and 40 CFR 63.311(f)1(iv).

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.10(b)(2)(v) and including a ''no'' in column 3. The EPA is also proposing to revise 40 CFR 63.311(f) in Coke oven Batteries NESHAP. When applicable, the provision requires sources to record actions taken during SSM events to show that actions taken were consistent with their SSM plan. The requirement is no longer appropriate because SSM plans would no longer be required.

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.10(c)(15) and including a ''no'' in column 3. The EPA is proposing that 40 CFR 63.10(c)(15) no longer apply. When applicable, the provision allows an owner or operator to use the affected source's SSM plan or records to satisfy the recordkeeping requirements of the SSM plan specified in 40 CFR 63.6(e), to also satisfy the requirements of 40 CFR 63.10(c)(10) through (12). The EPA is proposing to eliminate this requirement because SSM plans would no longer be required, and, therefore, 40 CFR 63.10(c)(15) no longer serves any useful purpose for affected units. The EPA is also proposing to revise 40 CFR 63.311(f) in Coke Oven Batteries NESHAP for similar changes.

g. Reporting

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.10(d)(5)(i) and including a ''no'' in column 3. The EPA is also proposing to revise 40 CFR 63.311(b)(2), 63.311(b)(5), 63.311(d)(2), in Coke oven Batteries NESHAP to reflect similar changes. In 40 CFR 63.10(d)(5)(i), the reporting requirements for SSMs are described. To replace the General Provisions reporting requirement, the EPA is proposing to add reporting requirements to 40 CFR 63.7341(d)(4) and 40 CFR 63.311(f)(1)(iv) and revise reporting requirements in 40 CFR 63.311(b)(2), (b)(5), and (d)(2). The replacement language differs from the General Provisions requirement in that it eliminates periodic SSM reports as a stand-alone report. We are proposing language that requires sources that fail to meet an applicable standard at any time to report the information concerning such events in the semiannual reporting period compliance report already required under this rule. We are proposing that the report would contain the number, date, time, duration, and the cause of such events (including unknown cause, if applicable), a list of the affected source or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions. Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available, or engineering judgment based on known process parameters. The EPA is proposing this requirement to ensure that there is adequate information to determine compliance, to allow the EPA to determine the severity of the failure to meet an applicable standard, and to provide data that may document how the source met the general duty to minimize emissions during a failure to meet an applicable standard.

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.10(d)(5)(i) and including a ''no'' in column 3 and revising the 40 CFR 63.7341(c)(4) text. We would no longer require owners or operators to determine whether actions taken to correct a malfunction are consistent with an SSM plan, because plans would no longer be required. The proposed amendments, therefore, eliminate the cross reference to 40 CFR 63.10(d)(5)(i) that contains the description of the previously required SSM report format and submittal schedule from this section. These specifications are no longer necessary because the events would be reported in otherwise required reports with similar format and submittal requirements.

We are proposing to revise the Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP General Provisions Applicability table (Table 1) by adding an entry for 40 CFR 63.10(d)(5)(ii) and including a ''no'' in column 3. The EPA is also proposing to revise 40 CFR 63.311(b)(2), 63.311(b)(5), 63.311(d)(2), in Coke Oven Batteries to reflect similar changes. In 40 CFR 63.10(d)(5)(ii) and 63.311, an immediate report is described for SSMs when a source failed to meet an applicable standard but did not follow the SSM plan. We would no longer require owners and operators to report when actions taken during a SSM were not consistent with an SSM plan, because plans would no longer be required.

2. Electronic Reporting

The EPA is proposing that owners and operators of coke oven facilities, under rules for both Coke Ovens Pushing, Quenching, and Battery Stacks NESHAP and Coke Oven Batteries NESHAP source categories, submit electronic copies of required performance test reports, periodic reports (including fenceline monitoring reports), and periodic certifications through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). A description of the electronic data submission process is provided in the memorandum *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules,* available in the docket for this action. The proposed rule requires that performance test results collected using test methods that are supported by the EPA's Electronic Reporting Tool (ERT) as listed on the ERT website [44] at the time of the test be submitted in the format generated through the use of the ERT or an electronic file consistent with the *xml* schema on the ERT website, and other performance test results be submitted in portable document format (PDF) using the attachment module of the ERT.

For the quarterly and semiannual compliance reports of the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP source category and the semiannual compliance certification of the Coke Oven Batteries NESHAP source category, the proposed rule requires that owners and operators use the appropriate spreadsheet template to submit information to CEDRI. A draft version of the proposed templates for these reports is included in the docket for this action.[45] The EPA specifically requests comment on the content, layout, and overall design of the templates.

The electronic submittal of the reports addressed in this proposed rulemaking would increase the usefulness of the data contained in those reports, is in keeping with current trends in data availability and transparency, would further assist in the protection of public health and the environment, would improve compliance by facilitating the ability of regulated facilities to demonstrate compliance with requirements and by facilitating the ability of delegated state, local, tribal, and territorial air agencies and the EPA to assess and determine compliance, and would ultimately reduce burden on regulated facilities, delegated air agencies, and the EPA. Electronic reporting also eliminates paper-based, manual processes, thereby saving time and resources, simplifying data entry, eliminating redundancies, minimizing data reporting errors, and providing data quickly and accurately to the affected facilities, air agencies, the EPA, and the public. Moreover, electronic reporting is consistent with the EPA's plan [46] to implement Executive Order 13563 and is in keeping with the EPA's agency-wide policy [47] developed in response to the White House's Digital Government Strategy.[48] For more information on the benefits of electronic reporting, see the memorandum *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and*

[44] *https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert.*

[45] See Draft Form 5900–618 Coke Ovens Part 63 Subpart L Semiannual Report.xlsx, Draft Form 5900–619 Part 63 Subpart L Fenceline Quarterly Report.xlsx, and Draft Form 5900–621 Coke Ovens Part 63 Subpart CCCCC Semiannual Report.xlsx, available at Docket ID. No's EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051.

[46] EPA's Final Plan for Periodic Retrospective Reviews, August 2011. Available at: *https://www.regulations.gov/document?D=EPA-HQ-OA-2011-0156-0154.*

[47] E-Reporting Policy Statement for EPA Regulations, September 2013. Available at: *https://www.epa.gov/sites/production/files/2016-03/documents/epa-ereporting-policy-statement-2013-09-30.pdf.*

[48] Digital Government: Building a 21st Century Platform to Better Serve the American People, May 2012. Available at: *https://obamawhitehouse.archives.gov/sites/default/files/omb/egov/digital-government/digital-government.html.*

National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules, referenced earlier in this section.

F. What compliance dates are we proposing?

The proposed date for complying with the proposed SSM changes is no later than the effective date of the final rule with the exception of recordkeeping provisions. For recordkeeping under the SSM, we are proposing that facilities must comply with this requirement 180 days after the effective date of the final rule. Recordkeeping provisions associated with malfunction events shall be effective no later than 180 days after the effective date of the final rule. The EPA is requiring additional information for recordkeeping of malfunction events, so the additional time is necessary to permit sources to read and understand the new requirements and adjust record keeping systems to comply. Reporting provisions are in accordance with the reporting requirements during normal operations and the semi-annual report of excess emissions.

The proposed date for complying with the proposed ERT submission requirements is 180 days after publication of the final rule. The proposed compliance date for the revisions to the allowable limits for leaking doors, lids, and offtakes under the Coke Oven Batteries NESHAP is 1 year after publication of the final rule. The proposed compliance date to begin fenceline monitoring is 1 year after the publication date of the final rule; facilities must perform root cause analysis and apply corrective action requirements upon exceedance of an annual average concentration action level starting 3 years after the publication date of the final rule.

The proposed compliance date for the 15 new MACT limits (based on the MACT floor, as described in section IV.A. of this preamble), in the NESHAP for Coke Ovens: Pushing, Quenching and Battery Stacks is 1 year after publication of the final rule. The proposed compliance date for the two new BTF emission limits for HNR waste heat stacks in the NESHAP for Coke Ovens: Pushing, Quenching and Battery Stacks is 3 years after publication of the final rule to allow time for the installation of ductwork to capture large volumes of battery COE and for acquisition and installation of control devices to treat the captured air. As described earlier in this section, the facility that is affected by the new BTF PM limit is located between three rivers, a state road, and a railroad track. Therefore, due to the unique configuration of facility, and the resulting space available to construct control devices and ductwork to reduce arsenic emissions from bypass stacks creates an impediment to a typical construction schedule. We estimate that the facility will need 3 years to complete all this work and comply with the new PM limit. Consequently, the proposed compliance date for the BTF PM limit for waste stacks in the Coke Ovens: Pushing, Quenching and Battery Stacks NESHAP is 3 years after publication of the final rule.

G. Adding 1-bromopropane to List of HAP

On January 5, 2022, the EPA published a final rule amending the list of hazardous air pollutants (HAP) under the CAA to add 1-bromopropane (1–BP) in response to public petitions previously granted by the EPA. (87 FR 393). Consequently, as each NESHAP is reviewed, we are evaluating whether the addition of 1–BP to the CAA section 112 HAP list impacts the source category. For the Coke Ovens: Pushing, Quenching, and Battery Stacks and Coke Oven Batteries source categories, we conclude that the inclusion of 1–BP as a regulated HAP would not impact the representativeness of the MACT standard because, based on available information, we have no evidence that 1–BP is emitted from this source category. As a result, no changes are being proposed to the Coke Ovens: Pushing, Quenching, Battery Stacks and Coke Oven Batteries NESHAPs based on the January 2022 rule adding 1–BP to the list of HAP. Nevertheless, we are requesting comments regarding the use of 1–BP and any potential emissions of 1–BP from this source category.

V. Summary of Cost, Environmental, and Economic Impacts

Table 10 below summarizes the proposed amendments for emission sources at coke oven facilities. The fenceline monitoring requirement under 40 CFR part 63, subpart L and the BTF limit for mercury (Hg) and non-Hg metals from HNR HRSG B/W heat stacks under 40 CFR part 63, subpart 5C are expected to require facilities to incur incremental costs relative to current standards. The 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 would reduce allowable emissions.

TABLE 10—SUMMARY OF THE PROPOSED AMENDMENTS TO 40 CFR PART 63, SUBPARTS CCCCC AND L

	Emissions source	Current standard	Proposed standard
40 CFR part 63, subpart L (Coke Oven Batteries)			
Facility-wide Fugitive Emissions		no requirement	Fenceline monitoring work practice standard for benzene.
Leaking from Coke Oven Doors [a]			
	Clairton facility	3.3–4% limit	1–1.5% limit.
	All other by-product facilities	3.3–4% limit	3% limit.
Leaking Lids		0.4% limit	0.2% limit.
Leaking Offtake Systems		2.5% limit	1.2% limit.
40 CFR part 63, subpart 5C (Pushing, Quenching, Battery Stacks) Regulatory Gaps			
HNR HRSG B/W Heat Stacks	Acid gases, formaldehyde, PAHs	no requirement	MACT floor limit.
	Hg and non-Hg metals	no requirement	BTF limit (one facility-Vansant, VA); MACT limit (all remaining facilities).
HNR HRSG Main Stack	Acid gases, Hg, PM metals, PAHs	no requirement	MACT floor limit.
Coke Pushing	Acid gases, hydrogen cyanide, Hg, PAHs.	no requirement	MACT floor limit.
By-product Recovery Battery Stack	Acid gases, hydrogen cyanide, Hg, PM metals.	no requirement	MACT floor limit.

[a] The higher opacity limit applies to ''tall'' doors (equal to or greater than 6 meters); lower leak limit applies to other doors.

A. What are the affected sources?

These proposed amendments to the NESHAP for Coke Ovens: Pushing, Quenching and Battery Stacks affect sources of HAP emissions from pushing coke out of ovens, quenching hot coke with water in quench towers, battery stacks of oven combustion gas at ByP coke plants, and from HRSG and HNR bypass/waste heat stacks at HNR facilities. These proposed amendments also apply to the NESHAP for Coke Oven Batteries, where the affected sources are the visible leaks from oven doors, charging port lids, and offtake ducts; and from emissions from charging coal into the coke ovens.

B. What are the air quality impacts?

The proposed BTF MACT standards for waste heat stacks at nonrecovery facilities in the Coke Ovens: Pushing, Quenching, and Battery Stacks source category would achieve an estimated 237 tpy reduction of PM emissions, 14 tpy reduction of $PM_{2.5}$ emissions, 4.0 tpy reduction of nonmercury metal HAP emissions, and 0.072 tpy (144 pounds per year) reduction of mercury emissions.

We expect that there will be no other air quality impacts due to this proposed rulemaking (*e.g.,* from the proposed 15 MACT floor limits for the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP source category). However, the 15 proposed MACT floor standards would ensure that air quality does not degrade over time.

We also expect that there will be no air quality impacts due to proposed reduction in allowable emissions from coke oven doors, lids and offtakes in the Coke Oven Batteries source category, but the proposed revised standards would ensure that air quality does not degrade over time.

C. What are the other environmental impacts?

Baghouses and ACI that are used to reduce air emissions of mercury and nonmercury HAP metals from bypass waste stacks at one HNR facility have the following environmental impacts: 15.1 million kilowatt-hour increased electricity use and 761 tons of hazardous dust for disposal. Baghouses and ACI are commonly used control devices for air emissions of PM and mercury. Consequently, there is a reduction in air emissions of 4.0 tpy nonmercury HAP metals and 144 pounds per year mercury.

D. What are the cost impacts?

Cost impacts would occur due to the required source testing every 5 years to demonstrate compliance with the proposed MACT floor and BTF standards for Coke Ovens: Pushing, Quenching, and Battery Stacks. Testing costs are estimated to be $3.2 million annualized costs including reporting and recordkeeping for the 11 operating facilities in the source category, with an average of $290,000 per year per facility including reporting and recordkeeping.

Cost impacts would occur due to the control device needed to reduce HAP emissions to meet the two BTF MACT standards. For the ACI and baghouses used to achieve the BTF standard for mercury, capital costs would be $314,000 for activated carbon and the injection systems and $7.2M for the baghouses along with necessary ductwork; annual costs for activated carbon and the injection systems would be $1.6M/yr and $3.0M/yr for the baghouses with necessary ductwork. For nonmercury metal HAP control, capital costs would be $7.2M for the baghouses along with necessary ductwork and annual costs would be $3.0M/yr. Total estimated capital costs for the BTF limit for waste heat stacks (nonmercury metal HAP and mercury) are $7.5M, with annualized costs of $4.7M (1 affected facility).

Total costs for fenceline monitoring are estimated to be $116,000 per year per facility including reporting and recordkeeping and $1.3M annually for the industry including reporting and recordkeeping (11 affected facilities).

Total capital costs for the industry (for 1 facility) are $7.5M and the estimated annual costs for the industry for all proposed requirements are about $9.1M/yr (including reporting and recordkeeping) for 11 affected facilities.

E. What are the economic impacts?

The EPA prepared an Economic Impact Analysis (EIA) for the proposed rule, which is available in the docket for this action. This proposed rule is not a significant regulatory action under Executive Order 12866 section 3(f)(1), as amended by Executive Order 14094, since it is not likely to have an annual effect on the economy of $200 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, territorial, or tribal governments or communities. The EIA analyzes the cost and emissions impact under the proposed requirements, and the projected impacts are presented for the 2025–2036 time period. The EIA analyzes the projected impacts of the proposed rule in order to better inform the public about its potential effects.

If the compliance costs, which are key inputs to an economic impact analysis, are small relative to the receipts of the affected industries, then the impact analysis may consist of a calculation of annual (or annualized) costs as a percent of sales for affected parent companies. This type of analysis is often applied when a partial equilibrium or more complex economic impact analysis approach is deemed unnecessary given the expected size of the impacts. The annualized cost per sales for a company represents the maximum price increase in the affected product or service needed for the company to completely recover the annualized costs imposed by the regulation. We conducted a cost-to-sales analysis to estimate the economic impacts of this proposal, given that the equivalent annualized value (EAV), which represents a flow of constant annual values that would yield a sum equivalent to the present value, of the compliance costs over the period 2025–2036 range from $8.9 million using a 7 percent discount rate to $9.6 million using a 3 percent discount rate in 2022 dollars, which is small relative to the revenues of the steel industry (of which the coke industry is a part).

There are five parent companies that operate active coke facilities: Cleveland-Cliffs, Inc. U.S. Steel, SunCoke Energy, Inc., DTE Energy Company, and the Drummond Company. Each reported greater than $1 billion in revenue in 2021. The EPA estimated the annualized compliance cost each firm is expected to incur and determined the estimated cost-to-sales ratio for each firm is less than 0.5 percent. James C. Justice Companies owns the idled Bluestone Coke facility, and the EPA estimated the compliance cost-to-sales ratio, if the facility were to resume operations, would be less than 0.1 percent. Therefore, the projected economic impacts of the expected compliance costs of the proposal are likely to be small. The EPA also conducted a small business screening to determine the possible impacts of the proposed rule on small businesses. Based on the Small Business Administration size standards and business information gathered by the EPA, this source category has one small business, which would not be subject to significant cost by the proposed requirements.

Details of the EIA can be found in the document prepared for this rule titled *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[49] that is located in the dockets for these rules.

F. What are the benefits?

The BTF MACT standards for waste heat stacks at nonrecovery facilities are expected to reduce HAP emissions (with concurrent control of $PM_{2.5}$) and could improve air quality and the health of persons living in surrounding communities. These standards are expected to reduce 4.0 tpy of nonmercury HAP metal (including arsenic and lead) and 144 lbs per year of mercury. These standards are also projected to reduce PM emissions by 237 tpy, of which 14 tpy is expected to be $PM_{2.5}$. The proposed amendments also revise the standards such that they apply at all times, which includes periods of SSM, and may result in some unquantified additional emissions reductions compared to historic or current emissions (*i.e.,* before the SSM exemptions were removed), and improve accountability and compliance assurance. In addition, we are also proposing fenceline monitoring, which would improve compliance assurance and potentially result in some unquantified additional emission reductions. The risk assessment (described in section IV.B.) quantifies the estimated health risks associated with the current emissions, although we did not attempt to monetize the health benefits of reductions in HAP in this analysis. The EPA remains committed to improving methods for monetizing HAP benefits by continuing to explore additional aspects of HAP-related risk, including the distribution of that risk.

G. What analysis of environmental justice did we conduct?

Executive Order 12898 directs EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms, which are specifically minority populations, low-income populations, and Indigenous peoples (59 FR 7629, February 16, 1994). Additionally, Executive Order 14096 built upon and supplemented that order (88 FR 25,251; April 26, 2023). For this action, pursuant to the Executive Orders, the EPA conducted an assessment of the impacts that would result from the proposed rule amendments, if promulgated, on communities with environmental justice concerns living near coke oven facilities.

Consistent with the EPA's commitment to integrating environmental justice in the Agency's actions, the Agency has carefully considered the impacts of this action on communities with environmental justice concerns. The EPA defines environmental justice as ''the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.''[50] The EPA further defines fair treatment to mean that ''no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies.'' In recognizing that communities with environmental justice concerns often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution. For purposes of analyzing regulatory impacts, the EPA relies upon its June 2016 ''Technical Guidance for Assessing Environmental Justice in Regulatory Analysis,''[51] which provides recommendations that encourage analysts to conduct the highest quality analysis feasible, recognizing that data limitations, time, resource constraints, and analytical challenges will vary by media and circumstance. The Technical Guidance states that a regulatory action may involve potential environmental justice concerns if it could: (1) Create new disproportionate impacts on minority populations, low-income populations, and/or Indigenous peoples; (2) exacerbate existing disproportionate impacts on minority populations, low-income populations, and/or Indigenous peoples; or (3) present opportunities to address existing disproportionate impacts on minority populations, low-income populations, and/or Indigenous peoples through an action under development.

1. Coke Ovens: Pushing, Quenching, and Battery Stacks Source Category Demographics

The EPA examined the potential for the 14 coke oven facilities to disproportionately impact residents in certain demographic groups in proximity to the facilities, both in the baseline and under the control options considered in this proposal. Specifically, the EPA analyzed how demographics and risk are distributed both pre- and post-control under the Coke Ovens: Pushing, Quenching, and Battery Stack NESHAP, enabling us to address the core questions that are posed in the EPA's 2016 Technical Guidance for Assessing Environmental Justice in Regulatory Analysis. In conducting this analysis, we considered key variables highlighted in the guidance including minority populations (including Hispanic or Latino), low-income populations, and/or Indigenous peoples. The methodology and detailed results of the demographic analysis are presented in the document titled *Analysis of Demographic Factors for Populations Living Near Coke Oven Facilities,*[52] which is available in the docket for this action.

To examine the potential for disproportionate impacts on certain population groups, the EPA conducted a proximity analysis, baseline risk-based analysis (*i.e.,* before implementation of any controls proposed in this action), and post-control risk-based analysis (*i.e.,* after implementation of the controls proposed in this action). The proximity demographic analysis is an assessment of individual demographic groups in the total population living within 10 km (~6.2 miles) and 50 km (~31 miles) of the facilities. The baseline risk-based demographic analysis is an assessment of risks to individual demographic groups in the population living within 10 km and 50 km of the facilities prior to the implementation of any controls proposed by this action (''baseline''). The post-control risk-based demographic analysis is an assessment of risks to individual demographic groups in the population living within 10 km and 50 km of the facilities after implementation of the controls proposed by this action (''post-control''). In this preamble, we focus on the 10 km radius for the demographic analysis because it encompasses all the facility MIR locations and captures 99 percent

[49] *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* (EPA–452/R–23–005). U.S. Environmental Protection Agency Office of Air Quality Planning and Standards, Health and Environmental Impacts Division, Research Triangle Park, NC. May 2023.

[50] *https://www.epa.gov/environmentaljustice.*

[51] See *https://www.epa.gov/environmentaljustice/technical-guidance-assessing-environmental-justice-regulatory-analysis.*

[52] Analysis of Demographic Factors for Populations Living Near Coke Oven Facilities. C. Sarsony. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. May 1, 2023. Docket ID Nos. EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051.

of the population with baseline cancer risks greater than or equal to 1-in-1 million from coke ovens source category emissions. The results of the proximity analysis for populations living within 50 km are included in the document titled *Analysis of Demographic Factors for Populations Living Near Coke Oven Facilities,* which is available in the docket for this action.

Under the risk-based demographic analysis, the total population, population percentages, and population count for each demographic group for the entire U.S. population is shown in the column titled ''Nationwide Average for Reference'' in Table 11 of this preamble. These national data are provided as a frame of reference to compare the results of the baseline proximity analysis, the baseline risk-based analyses, and the post-control risk-based analyses.

The results of the category proximity demographic analysis (see Table 11, column titled ''Baseline Proximity Analysis for Pop. Living within 10 km of Coke Oven Facilities'') indicate that a total of 1.3 million people live within 10 km of the 14 Coke Oven facilities. The percent of the population that is African American is more than double the national average (27 percent versus 12 percent). The percent of people living below the poverty level is almost double the national average (22 percent versus 13 percent).

The category baseline risk-based demographic analysis (see Table 11, column titled ''Pre-Control Baseline''), which focuses on populations that have higher cancer risks, indicates that the population with cancer risks greater than or equal to 1-in-1 million due to emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category is predominantly white (86 percent versus 60 percent nationally).[53] The population with cancer risks greater than or equal to 1-in-1 million is above the national average for percent of the population living below poverty (17 percent versus 13 percent) and the percent of the population that is over 25 without a high school diploma is almost 2 times the national average (21 percent versus 12 percent). The category post-control risk-based demographic analysis (see Table 11, column titled ''Post-Control'') shows that the controls under consideration in this proposal would reduce the number of people who are exposed to cancer risks greater than or equal to 1-in-1 million resulting from emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category by almost 90 percent, from approximately 2,900 to 400 people. The post-control population with risks greater than or equal to 1-in-1 million (approximately 400 people) live within 10 km of three facilities, two located in Pennsylvania and one in Virginia. However, over 90 percent of the 400 people with risks greater than or equal to 1-in-1 million are located around one facility in Clairton, Pennsylvania. The total post-control population with risks equal to or greater than 1-in-1 million is predominately white (96 percent). Note that there are only 26 people with post-control risks greater than 1-in-1 million (MIR of 2-in-1 million) due to emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category within 10 km of the coke oven facilities.

TABLE 11—COKE OVENS: PUSHING, QUENCHING, AND BATTERY STACKS SOURCE CATEGORY: PRE-CONTROL AND POST-CONTROL DEMOGRAPHICS OF POPULATIONS LIVING WITHIN 10 KM OF FACILITIES WITH CANCER RISK GREATER THAN OR EQUAL TO 1-IN-1 MILLION COMPARED TO THE NATIONAL AVERAGE AND PROXIMITY DEMOGRAPHICS

Demographic group	Nationwide average for reference	Baseline proximity analysis for population living within 10 km of Coke Oven facilities	Cancer risk $\geq$1-in-1 million within 10 km of Coke Oven facilities	
			Pre-control baseline	Post-control
Total Population	328M	1.3M	3K	400
Number of Facilities		14	3	3
Race and Ethnicity by Percent/Number of People				
White	60%	59%	86%	96%
	197M	789K	2.5K	400
African American	12%	27%	11%	2%
	40M	364K	300	<100
Native American	0.7%	0.2%	0.1%	0.0%
	2.2M	2.5K	<100	0
Hispanic or Latino (includes white and nonwhite)	19%	11%	1%	1%
	62M	144K	<100	<100
Other and Multiracial	8%	3%	2%	1%
	27M	44K	<100	<100
Income by Percent/Number of People				
Below Poverty Level	13%	22%	17%	10%
	44M	297K	500	<100
Above Poverty Level	87%	78%	83%	90%
	284M	1M	2.4K	300

[53] Note that, since there are only 57 people with a noncancer HI greater than or equal to 1 living around one facility, we did not conduct risk-based demographics for noncancer.

TABLE 11—COKE OVENS: PUSHING, QUENCHING, AND BATTERY STACKS SOURCE CATEGORY: PRE-CONTROL AND POST-CONTROL DEMOGRAPHICS OF POPULATIONS LIVING WITHIN 10 KM OF FACILITIES WITH CANCER RISK GREATER THAN OR EQUAL TO 1-IN-1 MILLION COMPARED TO THE NATIONAL AVERAGE AND PROXIMITY DEMOGRAPHICS—Continued

Demographic group	Nationwide average for reference	Baseline proximity analysis for population living within 10 km of Coke Oven facilities	Cancer risk ≥1-in-1 million within 10 km of Coke Oven facilities	
			Pre-control baseline	Post-control
Education by Percent/Number of People				
Over 25 and without a High School Diploma	12% 40M	14% 194K	21% 600	7% <100
Over 25 and with a High School Diploma	88% 288M	86% 1.1M	79% 2.3K	93% 400
Linguistically Isolated by Percent/Number of People				
Linguistically Isolated	5% 18M	3% 39K	1% <100	0% 0

Notes:

Nationwide population and demographic percentages are based on Census' 2015–2019 ACS 5-year block group averages. Total population count is based on 2010 Decennial Census block population.

To avoid double counting, the ''Hispanic or Latino'' category is treated as a distinct demographic category. A person who identifies as Hispanic or Latino is counted as Hispanic or Latino, regardless of race.

The number of facilities represents facilities with a cancer MIR above level indicated. When the MIR was located at a user assigned receptor at an individual residence and not at a census block centroid, we were unable to estimate population and demographics for that facility.

The sum of individual populations with a demographic category may not add up to total due to rounding.

2. Coke Oven Whole-Facility Demographics

As described in section IV.B.5. of this preamble, we assessed the facility-wide (or ''whole-facility'') risks for 14 coke oven facilities in order to compare the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP source category risk to the whole facility risks. This whole-facility demographic analysis characterizes the risks communities face from all HAP sources at coke oven facilities both before and after implementation of the controls proposed in this action that result in reduction of actual emissions. The whole facility risk assessment includes all sources of HAP emissions at each facility (described in section III.C.7. of this preamble). Note, no reduction in actual emissions or risk is expected at the whole facility level apart from the reduction in actual emissions and risk estimated for the proposed standards for the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP source category.

The whole-facility demographic analysis is an assessment of individual demographic groups in the total population living within 10 km (~6.2 miles) and 50 km (~31 miles) of the facilities. In this preamble, we focus on the 10 km radius for the demographic analysis because it encompasses all the facility MIR locations and captures 99 percent of the population with baseline cancer risks greater than or equal to 1-in-1 million from the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP source category emissions. The results of the whole-facility demographic analysis for populations living within 50 km are included in the document titled *Analysis of Demographic Factors for Populations Living Near Coke Oven Facilities,* which is available in the docket for this action.

The whole-facility demographic analysis post-control results are shown in Table 12 of this preamble. This analysis focused on the populations living within 10 km of the coke oven facilities with estimated whole-facility post-control cancer risks greater than or equal to 1-in-1 million. The risk analysis indicated that all emissions from the coke oven facilities, after the proposed reductions, expose a total of about 575,000 people living within 10 km of the 14 facilities to a cancer risk greater than or equal to 1-in-1 million. About 83 percent of these 575,000 people with a cancer risk greater than or equal to 1-in-1 million live within 10 km of 3 facilities—2 in Alabama and 1 in Pennsylvania. The population with cancer risks greater than or equal to 1-in-1 million living within 10 km of the two facilities in Alabama is 56 percent African American, which is significantly higher than the national average of 12 percent. Note that, in the baseline, there are only 26 people with post-control risks greater than 50-in-1 million within 10 km of the coke oven facilities, therefore, the demographics of this population is not discussed.

When the coke oven whole-facility populations are compared to the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP source category populations in the post-control scenarios, 573,000 additional people are estimated to have risks greater than or equal to 1-in-1 million. The maximum lifetime individual cancer risk posed by the 14 modeled facilities based on whole facility emissions is 50-in-1 million, with COE from coke oven doors (a regulated source in the Coke Oven Batteries source category) driving the whole facility risk.

While the pre-control and post-control Coke Ovens: Pushing, Quenching, and Battery Stacks source category population with risks ≥1-in-1 million (shown in Table 12) is disproportionately White, the pre-control and post-control whole-facility population with risks ≥1-in-1 million (shown in Table 12) is disproportionately African American. Specifically, the pre-control and post-control whole-facility population with risk greater than 1-in-1 million is 26 percent African American compared to the national average of 12 percent. In addition, the percentage of the pre-control and post-control whole-facility population with risks ≥1-in-1 million that is below the poverty level (17 percent) is above the national average (13 percent).

TABLE 12—WHOLE-FACILITY: PRE-CONTROL AND POST-CONTROL DEMOGRAPHICS OF POPULATIONS LIVING WITHIN 10 KM OF FACILITIES WITH CANCER RISK GREATER THAN OR EQUAL TO 1-IN-1 MILLION FROM COKE OVEN WHOLE-FACILITY EMISSIONS COMPARED TO THE NATIONAL AVERAGE AND PROXIMITY DEMOGRAPHICS

Demographic group	Nationwide average for reference	Baseline proximity analysis for pop. living within 10 km of Coke Oven facilities	Cancer risk ≥1-in-1 million within 10 km of Coke Oven facilities	
			Pre-control baseline	Post-control
Total Population	328M	1.4M	575K	573K
Number of Facilities	....	14	9	9
Race and Ethnicity by Percent/Number of People				
White	60% 197M	58% 805K	66% 379K	66% 377K
African American	12% 40M	27% 381K	26% 151K	26% 151K
Native American	0.7% 2.2M	0.2% 2.5K	0.2% 900	0.2% 900
Hispanic or Latino (includes white and nonwhite)	19% 62M	12% 166K	4% 25K	4% 25K
Other and Multiracial	8% 27M	3% 45K	3% 19K	3% 19K
Income by Percent/Number of People				
Below Poverty Level	13% 44M	22% 310K	17% 100K	17% 100K
Above Poverty Level	87% 284M	78% 1.1M	83% 475K	83% 474K
Education by Percent/Number of People				
Over 25 and without a High School Diploma	12% 40M	15% 206K	10% 55K	9% 54K
Over 25 and with a High School Diploma	88% 288M	85% 1.2M	90% 520K	91% 519K
Linguistically Isolated by Percent/Number of People				
Linguistically Isolated	5% 18M	3% 44K	1% 6K	1% 6K

Notes:

Nationwide population and demographic percentages are based on Census' 2015–2019 ACS 5-year block group averages. Total population count is based on 2010 Decennial Census block population.

To avoid double counting, the "Hispanic or Latino" category is treated as a distinct demographic category. A person who identifies as Hispanic or Latino is counted as Hispanic or Latino, regardless of race.

The number of facilities represents facilities with a cancer MIR above level indicated. When the MIR was located at a user assigned receptor at an individual residence and not at a census block centroid, we were unable to estimate population and demographics for that facility.

The sum of individual populations with a demographic category may not add up to total due to rounding.

H. What analysis of children's environmental health did we conduct?

This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. The EPA's assessment of the potential impacts to human health from emissions at existing coke ovens sources in the Coke Ovens: Pushing, Quenching, and Battery Stacks source category are discussed in section IV.B. and IV.C. of this preamble. The proposed BTF limit for mercury at HNR waste heat stacks, described in section IV.A. of this preamble, would reduce actual and allowable mercury emissions, thereby reducing potential exposure to children, including the unborn. Although we did not perform a risk assessment of the Coke Oven Batteries source category in this action, we note that COE, which is primarily emitted from this source category, has a mutagenic mode of action; therefore, changes to the standards for the Coke Oven Batteries NESHAP under the technology review could reduce the exposure of children to mutagens.

VI. Request for Comments

We solicit comments on this proposed action. In addition to general comments on this proposed action, we are also interested in specific issues, as follows:

- Additional data that may improve the risk assessments and other analyses. We are specifically interested in receiving any improvements to the data used in the site-specific emissions profiles used for risk modeling. Such data should include supporting documentation in sufficient detail to allow characterization of the quality and representativeness of the data or information. Section VII. of this preamble provides more information on submitting data;
- All aspects of cost and benefit estimates for the proposed action;

• New methods available to reduce leaks from doors, lids, and offtakes from coke oven batteries;

• The revised equation to estimate coke oven door leaks [39] discussed in section IV.D.6., above, as well as the recently received (June 27, 2023) EPA Method 303 data from two batteries at each of two coke facilities, that are located in the dockets for the rules;

• The validity of the assumption of 2 for an acute factor;

• Establishing a 1-hour battery stack MACT standard, including comments regarding whether or not EPA should include such a standard in the final rule and an explanation as to why or why not;

• For fenceline monitoring, we request comment on the following:

• The suitability of selecting benzene or other HAP, including naphthalene and other PAH, as the indicator to be monitored by fenceline samplers;

• Whether it would be appropriate to require multiple HAP to be monitored at the fenceline, considering the capital and annual cost for additional monitors that are not passive/diffusion type, and if so, which pollutants should be monitored;

• Alternative approaches for making adjustments for off-site contributions to the fenceline concentration of benzene; whether it is appropriate to establish a standard time frame for compliance with actions listed in a corrective action plan and whether the approval of the corrective action plan should be performed by to state, local and tribal governments;

• The proposed approach for reducing fenceline monitoring requirements for facilities that consistently measure fenceline concentrations below the concentration action level and the measurement level that should be used to provide such relief;

• Suggestions for other ways to improve the fenceline monitoring requirements; and

• The minimum time period facilities should be required to conduct fenceline monitoring before allowing a reduction in monitoring frequency due to low fenceline concentration levels;

• The level of performance, in terms of monitored fenceline concentrations, that would enable a facility to reduce the frequency of data collection and reporting; and

• The costs associated with changes in equipment or practices resulting from an exceedance of the fenceline action level;

• Whether we have successfully ensured that the provisions we are proposing to eliminate are inappropriate, unnecessary, or redundant in the absence of the SSM exemption;

• Whether any situations exist where separate standards, such as work practices, would be more appropriate during periods of startup and shutdown rather than the current standard;

• The content, layout, and overall design of the templates for quarterly and semiannual compliance reports;

• The use of other surrogates, practices, or techniques to determine leaks from HNR ovens, that could be applied to HNR door leaks as an alternatives to EPA Method 303A, to include alternative monitoring approaches or techniques. For those alternative techniques that could be applied to measuring HNR door leaks, we are soliciting information on equivalency studies that have been performed against EPA Method 303 and/or 303A, and any potential training requirements.

• The use of either additional pressure transducers to monitor for negative pressure inside HNR common tunnels and ovens (including comments on number and placement of monitors) or a requirement for an approved monitoring plan; or a requirement for both additional monitors and an approved plan.

• The measures or monitoring methods for limiting soaking emissions from ByP ovens (including the definition of soaking).

• Changes to Coke Oven Batteries NESHAP to require both leak monitoring and pressure monitoring instead of a choice between the two, and whether pressure monitoring should be measured at least during key points in the whole oven cycle, possibly more often.

• Other potential approaches to establish emissions standards for the HRSG main stacks and bypass stacks, including: (1) whether the EPA should consider the emission points all combined (*i.e.,* HRSG main stack plus HRSG bypass stack emissions) and establish standards based on the best five units or best five facilities including emissions following the HRSGs and their control devices and emissions from the bypass over a period of time (*e.g.,* per year or per month); or (2) a standard that is based in part on limiting the number of hours per year or per month that bypass stack can be used.

• The accuracy of revenue and employment data included in the EIA;

• The accuracy of the cost-to-sales ratios calculated in the EIA and whether the BTF limit for Hg and non-Hg metals could put SunCoke's Vansant facility at risk of closure;

• Other ongoing rulemaking efforts (such as integrated iron and steel manufacturing, taconite iron ore processing) that may impact facilities in this source category and the cumulative regulatory burden of rules affecting these facilities;

• Potential interactions between this proposed action and potential timelines and changes to facilities installing carbon capture and/or using hydrogen, or how the regulation might affect steel decarbonization efforts; and

• Potential impacts, if any, on: U.S. manufacturing, the creation or retention of jobs (and the quality of those jobs) and supply chains; National Security; renewable and clean energy projects; projects funded by the Bipartisan Infrastructure Law and the CHIPS and Science Act; aerospace manufacturing; telecommunications; critical infrastructure for national defense, and global competitiveness.

VII. Submitting Data Corrections

The site-specific emissions profiles used in the source category risk and demographic analyses and instructions are available for download on the source category websites at *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission,* or *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air.* The data files include detailed information for each HAP emissions release point for the facilities and sources in the source categories.

If you believe that the data are not representative or are inaccurate, please identify the data in question, provide your reason for concern, and provide any ''improved'' data that you have, if available. When you submit data, we request that you provide documentation of the basis for the revised values to support your suggested changes. To submit comments on the data downloaded from the RTR website, complete the following steps:

1. Within this downloaded file, enter suggested revisions to the data fields appropriate for that information.

2. Fill in the commenter information fields for each suggested revision (*i.e.,* commenter name, commenter organization, commenter email address, commenter phone number, and revision comments).

3. Gather documentation for any suggested emissions revisions (*e.g.,* performance test reports, material balance calculations).

4. Send the entire downloaded file with suggested revisions in Microsoft® Access format and all accompanying documentation to Docket ID Nos. EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051 (through the method described in the **ADDRESSES** section of this preamble).

5. If you are providing comments on a single facility or multiple facilities, you need only submit one file for all facilities. The file should contain all suggested changes for all sources at that facility (or facilities). We request that all data revision comments be submitted in the form of updated Microsoft® Excel files that are generated by the Microsoft® Access file. These files are provided on the source category websites at *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-pushing-quenching-and-battery-stacks-national-emission* and *https://www.epa.gov/stationary-sources-air-pollution/coke-ovens-batteries-national-emissions-standards-hazardous-air.*

VIII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 14094: Modernizing Regulatory Review

This action is a ''significant regulatory action'' as defined in Executive Order 12866, as amended by Executive Order 14094. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for Executive Order 12866 review. Documentation of any changes made in response to the Executive Order 12866 review is available in the docket. The EPA prepared an economic analysis of the potential impacts associated with this action. This analysis, *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,* is available in the dockets EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051.

B. Paperwork Reduction Act (PRA)

The information collection activities in this proposed rule have been submitted for approval to OMB under the PRA. The information collection request (ICR) documents that the EPA prepared have been assigned EPA ICR numbers 1995.09 and 1362.14. You can find a copy of the ICRs in the dockets for this rule, and they are briefly summarized here.

We are proposing amendments to the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP that require compliance testing for 15 MACT and 2 BTF limits and to the Coke Oven Battery NESHAP that require fenceline monitoring. Furthermore, the amendments also require electronic reporting and remove the SSM exemptions in both NESHAPs. We are also incorporating other revisions (*e.g.,* facility counts) that affect reporting and recordkeeping for coke oven facilities. This information would be collected to assure compliance with the CAA.

For ICR: NESHAP for Coke Oven Pushing, Quenching, and Battery Stacks (40 CFR part 63, subpart CCCCC) (OMB Control Number 2060–0521).

Respondents/affected entities: Coke Ovens: Pushing, Quenching, and Battery Stacks source category.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart CCCCC).

Estimated number of respondents: 14 facilities.

Frequency of response: One time.

Total estimated burden of entire rule: The annual recordkeeping and reporting burden for facilities to comply with all of the requirements in the NESHAPs is estimated to be 32,500 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost of entire rule: The annual recordkeeping and reporting cost for all facilities to comply with all of the requirements in the NESHAPs is estimated to be $4,230,000 (per year), of which $1,060,000 (per year) is for this proposal, and $3,043,000 is for other costs related to continued compliance with the NESHAPs in addition to $125,000 for the operation and maintenance of leak detectors and continuous opacity monitors. The total rule costs reflect an overall increase of $1,280,000 (per year) from the previous ICR due to the compliance with 17 additional MACT/BTF limits, transition to electronic reporting, and elimination of SSM requirements.

For ICR: NESHAP for Coke Oven Batteries (40 CFR part 63, subpart L) (OMB Control Number 2060–0253).

Respondents/affected entities: Coke Oven Batteries source category.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart L).

Estimated number of respondents: 14 facilities.

Frequency of response: One time.

Total estimated burden of entire rule: The annual recordkeeping and reporting burden for facilities to comply with all of the requirements in the NESHAPs is estimated to be 63,000 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost of entire rule: The annual recordkeeping and reporting cost for all facilities to comply with all of the requirements in the NESHAPs is estimated to be $7,795,000 (per year), of which $530,000 (per year) is for this proposal and $7,410,000 is for other costs related to continued compliance with the NESHAPs. The total rule costs reflect an increase of $1,070,000 (per year) from the previous ICR, due to revised HNR facility counts, transition to electronic reporting, addition of fenceline monitoring, and elimination of SSM requirements.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Submit your comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the EPA using the docket identified at the beginning of this rule. The EPA will respond to any ICR-related comments in the final rule. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs using the interface at *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under Review—Open for Public Comments'' or by using the search function. OMB must receive comments no later than September 15, 2023.

C. Regulatory Flexibility Act (RFA)

I certify that this action would not have a significant economic impact on a substantial number of small entities under the RFA. Small entities that may be impacted by this rulemaking include Coke facilities located within an integrated iron and steel manufacturing facility under NAICS 331110 (Iron and Steel Mills and Ferroalloy Manufacturing) with 1,500 or fewer employees, or facilities under NAICS 324199 (All Other Petroleum and Coal Products Manufacturing, with 500 or fewer workers. None of the facilities currently in operation that are potentially affected by this rulemaking proposal under these size definitions are ''small businesses'' and therefore will not have a significant economic impact. Additional details of the analysis can be found in the document prepared for this rule titled *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.*

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. While this action creates an enforceable duty on the private sector, the cost does not exceed $100 million or more.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes. No tribal governments own facilities subject to these NESHAP. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045 directs federal agencies to include an evaluation of the health and safety effects of the planned regulation on children in federal health and safety standards and explain why the regulation is preferable to potentially effective and reasonably feasible alternatives. This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. Due to control of mercury and nonmercury metal HAP at waste heat stacks at nonrecovery facilities, we believe the health of children living nearby would be improved. This action's health and risk assessments for the Coke Ovens: Pushing, Quenching, and Battery Stack source category are contained in section IV. of this preamble and further documented in *The Residual Risk Assessment or the Coke Ovens: Pushing, Quenching, and Battery Stack Source Category in Support of the 2023 Risk and Technology Review Proposed Rule,* available in the docket for this action (EPA–HQ–OAR–2002–0085). However, EPA's Policy on Children's Health applies to this action.

Although we did not perform a risk assessment of the Coke Oven Batteries source category in this action, we note that COE, which is primarily emitted from this source category, has a mutagenic mode of action; therefore, changes to the standards for the Coke Oven Batteries NESHAP under the technology review could reduce the exposure of children to mutagens.

Information on how this policy was applied is available under ''Children's Environmental Health'' in the **SUPPLEMENTARY INFORMATION** section of this preamble.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. We have concluded this action is not likely to have any adverse energy effects because energy use is projected to increase by only 15 million kilowatt-hours to operate control devices to achieve the proposed air emissions reductions in HAP metals (see section V.C. of this preamble, ''What are the other environmental impacts?'').

I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

This action involves technical standards. Therefore, the EPA conducted searches for the RTR for the Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP and the NESHAP for Coke Oven Batteries through the Enhanced National Standards Systems Network Database managed by the American National Standards Institute (ANSI). We also contacted VCS organizations and accessed and searched their databases. For Coke Oven Batteries NESHAP, we conducted searches for EPA Methods EPA Methods 1, 2, 2F, 2G, 3, 3A, 3B, 4, 5, 5D, 9, 18, 22 of 40 CFR part 60, appendix A, EPA Methods 303, 303A of 40 CFR part 63, appendix A. No applicable voluntary consensus standards were identified for EPA Methods 2F, 2G, 5D, 22, 303, and 303A. For Coke Ovens: Pushing, Quenching, Battery Stacks NESHAP, searches were conducted for EPA Methods 1, 2, 2F, 2G, 3, 3A, 3B, 4, 5, 5D, 9, 23, 26, 26A, 29 of 40 CFR part 60, appendix A, EPA Method 160.1 in 40 CFR part 136.3, appendix A, EPA Methods 316 and 320 40 CFR part 63, appendix A. No applicable voluntary consensus standards were identified for EPA Methods 2F, 2G, 5D, 316, and 160.1.

During the EPA's VCS search, if the title or abstract (if provided) of the VCS described technical sampling and analytical procedures that are similar to the EPA's reference method, the EPA reviewed it as a potential equivalent method. We reviewed all potential standards to determine the practicality of the VCS for this rule. This review requires significant method validation data that meet the requirements of EPA Method 301 for accepting alternative methods or scientific, engineering and policy equivalence to procedures in the EPA reference methods. The EPA may reconsider determinations of impracticality when additional information is available for a particular VCS.

The EPA proposes to incorporate by reference the VCS ANSI/ASME PTC 19.10–1981—Part 10 (2010), ''Flue and Exhaust Gas Analyses.'' The manual procedures (but not instrumental procedures) of VCS ANSI/ASME PTC 19.10–1981—Part 10 may be used as an alternative to EPA Method 3B for measuring the oxygen or carbon dioxide content of the exhaust gas. This standard is acceptable as an alternative to EPA Method 3B and is available from ASME at *http://www.asme.org;* by mail at Three Park Avenue, New York, NY 10016–5990; or by telephone at (800) 843–2763. This method determines quantitatively the gaseous constituents of exhausts resulting from stationary combustion sources. The gases covered in ANSI/ASME PTC 19.10–1981 are oxygen, carbon dioxide, carbon monoxide, nitrogen, sulfur dioxide, sulfur trioxide, nitric oxide, nitrogen dioxide, hydrogen sulfide, and hydrocarbons, however the use in this rule is only applicable to oxygen and carbon dioxide.

The EPA proposes to incorporate by reference the VCS ASTM D7520–16, ''Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere'' which is an instrumental method to determine plume opacity in the outdoor ambient environment as an alternative to visual measurements made by certified smoke readers in accordance with EPA Method 9. The concept of ASTM D7520–16, also known as the Digital Camera Opacity Technique or DCOT, is a test protocol to determine the opacity of visible emissions using a digital camera. This method is based on previous method development using digital still cameras and field testing of those methods. The purpose of ASTM D7520–16 is to set a minimum level of performance for products that use DCOT to determine plume opacity in ambient environments.

The DCOT method is an acceptable alternative to EPA Method 9 with the following caveats:

- During the digital camera opacity technique (DCOT) certification procedure outlined in section 9.2 of ASTM D7520–16, you or the DCOT vendor must present the plumes in front of various backgrounds of color and contrast representing conditions anticipated during field use such as blue sky, trees, and mixed backgrounds (clouds and/or a sparse tree stand).
- You must also have standard operating procedures in place including daily or other frequency quality checks to ensure the equipment is within manufacturing specifications as outlined in section 8.1 of ASTM D7520–16.
- You must follow the record keeping procedures outlined in 40 CFR 63.10(b)(1) for the DCOT certification, compliance report, data sheets, and all raw unaltered JPEGs used for opacity and certification determination.
- You or the DCOT vendor must have a minimum of four (4) independent technology users apply the software to determine the visible opacity of the 300 certification plumes. For each set of 25 plumes, the user may not exceed 15 percent opacity of any one reading and the average error must not exceed 7.5 percent opacity.
- This approval does not provide or imply a certification or validation of any vendor's hardware or software. The onus to maintain and verify the certification and/or training of the DCOT camera, software and operator in accordance with ASTM D7520–16 and this letter is on the facility, DCOT operator, and DCOT vendor. This method describes procedures to determine the opacity of a plume, using digital imagery and associated hardware and software, where opacity is caused by PM emitted from a stationary point source in the outdoor ambient environment. The opacity of emissions is determined by the application of a DCOT that consists of a digital still camera, analysis software, and the output function's content to obtain and interpret digital images to determine and report plume opacity.

The ASTM D7520–16 document is available from ASTM at *https://www.astm.org* or 1100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, telephone number: (610) 832–9500, fax number: (610) 832–9555 at *service@astm.org.*

The EPA proposes to incorporate by reference the VCS ASTM D6420–18, "Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry" which provides on-site analysis of extracted, unconditioned, and unsaturated (at the instrument) gas samples from stationary sources. The ASTM D6420–18 method employs a direct interface gas chromatograph/mass spectrometer to identify and quantify 36 volatile organic compounds (or sub-set of these compounds). The ASTM method incorporates a performance-based approach, which validates each analysis by placing boundaries on the instrument response to gaseous internal standards and their specific mass spectral relative abundance; using this approach, the test method may be extended to analyze other compounds.

This ASTM D2460–18 method is an acceptable alternative to EPA Method 18 only when the target compounds are all known and the target compounds are all listed in ASTM D6420 as measurable. It should not be used for methane and ethane because atomic mass is less than 35. ASTM D6420 should never be specified as a total VOC method. The ASTM D6420–18 document is available from ASTM at *https://www.astm.org* or 1100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, telephone number: (610) 832–9500, fax number: (610) 832–9555 at *service@astm.org.*

The EPA proposes to incorporate by reference the VCS ASTM D6784–16, "Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro 3 Method)" as an acceptable alternative to EPA Method 29 (portion for mercury only) as a method for measuring mercury.

Note: This applies to concentrations approximately 0.5–100 $\mu g/Nm^3$.

The ASTM D6784–16 document is available from ASTM at *https://www.astm.org* or 1100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, telephone number: (610) 832–9500, fax number: (610) 832–9555 at *service@astm.org.*

The EPA proposes to incorporate by reference the VCS ASTM D6348–12e1, "Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy" as an acceptable alternative to EPA Method 320. This ASTM method is an FTIR-based field test method used to quantify gas phase concentrations of multiple target analytes from stationary source effluent. The method provides near real time analysis of extracted gas samples from stationary sources. The method employs an extractive sampling system to direct stationary source effluent to an FTIR spectrometer for the identification and quantification of gaseous compounds. The test method is potentially applicable for the determination of compounds that (1) have sufficient vapor pressure to be transported to the FTIR spectrometer and (2) absorb a sufficient amount of infrared radiation to be detected.

In the 9/22/08 NTTA summary, ASTM D6348–03(2010) was determined equivalent to EPA Method 320 with caveats. ASTM D6348–12e1 is a revised version of ASTM D6348–03(2010) and includes a new section on accepting the results from direct measurement of a certified spike gas cylinder, but still lacks the caveats we placed on the D6348–03(2010) version. The voluntary consensus standard ASTM D6348–12e1 "Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy" is an acceptable alternative to EPA 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:

- The test plan preparation and implementation in the Annexes to ASTM D 6348–12e1, sections A1 through A8 are mandatory; and
- In ASTM D6348–12e1 Annex A5 (Analyte Spiking Technique), the percent (%) R must be determined for each target analyte (Equation A5.5).

In order for the test data to be acceptable for a compound, %R must be 70% ≥ R ≤ 130%. If the %R value does not meet this criterion for a target compound, the test data is not acceptable for that compound and the test must be repeated for that analyte (*i.e.,* the sampling and/or analytical procedure should be adjusted before a retest). The %R value for each compound must be reported in the test report, and all field measurements must be corrected with the calculated %R value for that compound by using the following equation:

$$\text{Reported Results} = (\text{Measured Concentration in Stack})/(\%R) \times 100$$

The ASTM D6348–12e1 document is available from ASTM at *https://www.astm.org* or 1100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, telephone number: (610) 832–

9500, fax number: (610) 832–9555 at *service@astm.org.*

Additional information for the VCS search and determinations can be found in the memorandum titled *Voluntary Consensus Standard Results for Coke Ovens: Pushing, Quenching and Battery Stacks: National Emission Standards for Hazardous Air Pollutants* and *Voluntary Consensus Standard Results for Coke Oven Batteries: National Emission Standards for Hazardous Air Pollutants,* available in the EPA–HQ–OAR–2002–0085, EPA–HQ–OAR–2003–0051 dockets for this proposed rule.

The EPA is also incorporating by reference Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements, Version 2.0 (Final), March 2008 (EPA–454/B–08–002). This EPA document is dedicated to meteorological measurement systems and their support equipment, and is designed to provide clear and concise information and guidance to the State/Local/Tribal air pollution control agencies that operate meteorological monitoring equipment and systems. New monitoring rules require that meteorological data be collected at all National Core network stations, as stated in the CFR Chapter 40 Section 58, Appendix D.3.b. Thus, there is a need for updated information to guide agencies as they implement the new network. Since the last version of Volume IV was written, there have been a number of breakthroughs in instrument development and support equipment, which are reflected in this revision (2.0). A copy of this handbook can be obtained from the National Service Center for Environmental Publications at *https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100FOMB.txt* or from the dockets to these rules (EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051).

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on communities with environmental justice concerns.

The EPA believes that the human health or environmental conditions that exist prior to this action result in or have the potential to result in disproportionate and adverse human health or environmental effects on communities with environmental justice concerns.

As discussed in section V.G. of this preamble, the population with risks greater than or equal to 1-in-1 million due to emissions from all sources of HAP at coke oven facilities is disproportionately (26 percent) African American compared to the national average (12 percent African American). About 83 percent of the 575,000 people with a cancer risk greater than or equal to 1-in-1 million live within 10 km of 3 facilities—two in Alabama and one in Pennsylvania. The population with cancer risks greater than or equal to 1-in-1 million living within 10 km of the two facilities in Alabama is 56 percent African American, which is significantly higher than the national average of 12 percent. In addition, the population with risks ≥1-in-1 million due to emissions from all sources of HAP at coke oven facilities that is below the poverty level (17 percent) is above the national average (13 percent).

The EPA believes that this action is likely to reduce existing disproportionate and adverse effects on communities with environmental justice concerns. The impacts of these proposed rules are to limit allowable emissions from coke ovens sources in 40 CFR part 63, subparts CCCCC and L. In addition, proposed BTF standards for HNR waste heat stacks would limit actual emissions for mercury and nonmercury metal HAP [26] from these sources.

While the proposed measures do not significantly decrease the number of those below the poverty level and those over 25 years of age without a high school diploma who have risks greater than or equal to 1-in-1 million due to HAP emissions from pushing, quenching, and battery stacks sources (Table 12), the proposed standards for the Coke Ovens: Pushing, Quenching, and Battery Stacks source category achieve a reduction in the disparity for these groups (Table 12). Specifically, of the people living within 10 km of a coke oven facility with risk greater than or equal to 1-in-1 million due to HAP emissions from the Coke Ovens: Pushing, Quenching, and Battery Stacks source category, the percentage who are below the poverty level is estimated to decrease from 17 percent to 10 percent under the proposed standards and the percentage who are over 25 without a high school diploma is estimated to decrease from 21 percent to 7 percent under the proposed standards. The EPA also is proposing that coke oven facilities conduct fenceline monitoring for benzene and report these data electronically to the EPA so that it can be made public and provide fenceline communities with greater access to information about potential emissions impacts.

The information supporting this Executive Order review is contained in section V.G. of this preamble and in the document *Analysis of Demographic Factors for Populations Living Near Coke Oven Facilities* located in the dockets for this rule (EPA–HQ–OAR–2002–0085 and EPA–HQ–OAR–2003–0051) and described above in section V.G.

Michael S. Regan,

Administrator.

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