Black Production source category and would not be affected by this action. Thus, Executive Order 13175 does not apply to this action.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in sections III.A and IV.A and B of this preamble.

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

This action is not subject to Executive Order 13211 because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

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

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

The documentation for this decision is contained in sections IV.A, IV.B, IV.F, and IV.G of this preamble. As discussed in sections IV.A, IV.B, IV.F, and IV.G of this preamble, we performed a demographic analysis for each source category, which is an assessment of risks to individual demographic groups, of the population close to the facilities (within 50 km and within 5 km). In our analysis, we evaluated the distribution of HAP-related cancer risks and noncancer hazards from the Carbon Black Production source category across different social, demographic, and economic groups within the populations living near operations identified as having the highest risks.

Results of the demographic analysis performed for the Carbon Black Production source category indicate that, for four of the 11 demographic groups, African American, people age 65 and up, people living below the poverty level, and adults over 25 without a high school diploma that reside within 5 km of facilities in the source category is greater than the corresponding national percentage for the same demographic groups. When examining the risk levels of those exposed to emissions from carbon black production facilities, we find nobody is exposed to a cancer risk at or above 1-in-1 million and nobody is exposed to a chronic noncancer TOSHI greater than 1. For additional information see the memorandum, *Risk and Technology Review—Analysis of Demographic Factors For Populations Living Near Carbon Black Production Source Category Operations,* available in the docket for this action.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

Andrew Wheeler,

Administrator.

[FR Doc. 2021–00233 Filed 1–13–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2020–0148; FRL–10018–66–OAR]

RIN 2060–AU67

National Emission Standards for Hazardous Air Pollutants: Refractory Products Manufacturing Residual Risk and Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is proposing amendments to address the results of the residual risk and technology review (RTR) that the EPA is required to conduct in accordance with the Clean Air Act (CAA) with regard to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Refractory Products Manufacturing. The EPA is proposing to find the risks due to emissions of air toxics from this source category under the current standards to be acceptable and that the standards provide an ample margin of safety to protect public health. We are proposing no revisions to the existing numerical emission limits based on these analyses; however, we are proposing new provisions for certain hazardous air pollutants (HAP). The EPA is also proposing to amend provisions addressing emissions during periods of startup, shutdown, and malfunction (SSM) and provisions addressing emissions during periods of scheduled maintenance; to amend provisions regarding electronic reporting of performance test results; and to make miscellaneous clarifying and technical corrections.

DATES: *Comments.*

Comments must be received on or before March 1, 2021. 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 February 16, 2021.

Public hearing. If anyone contacts us requesting a public hearing on or before January 19, 2021, 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 No. EPA–HQ–OAR–2020–0148, 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 No. EPA–HQ–OAR–2020–0148 in the subject line of the message.
- *Fax:* (202) 566–9744. Attention Docket ID No. EPA–HQ–OAR–2020–0148.
- *Mail:* U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA–HQ–OAR–2020–0148, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- *Hand/Courier Delivery (by scheduled appointment only):* 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 No. 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. Out of an abundance of caution for members of the public and

our staff, the EPA Docket Center and Reading Room are closed to the public, with limited exceptions, to reduce the risk of transmitting COVID–19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via *https://www.regulations.gov/* or email, as there may be a delay in processing mail and faxes. Hand deliveries and couriers may be received by scheduled appointment only. For further information on EPA Docket Center services and the current status, please visit us online at *https://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Ms. Paula Hirtz, Minerals and Manufacturing Group, Sector Policies and Programs Division (D243–04), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2618; fax number: (919) 541–4991; and email address: *hirtz.paula@epa.gov.* For specific information regarding the risk modeling methodology, contact Mr. Chris Sarsony, 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) 541–4843; fax number: (919) 541–0840; and email address: *sarsony.chris@epa.gov.*

SUPPLEMENTARY INFORMATION:

Participation in virtual public hearing. Please note that the EPA is deviating from its typical approach for public hearings because the President has declared a national emergency. Due to the current Centers for Disease Control and Prevention (CDC) recommendations, as well as state and local orders for social distancing to limit the spread of COVID–19, the EPA cannot hold in-person public meetings at this time.

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 virtual hearing will be held on January 29, 2021. The hearing will convene at 9:00 a.m. Eastern Time 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/refractory-products-manufacturing-national-emissions-standards.*

Upon publication of this document in the **Federal Register**, the EPA will begin pre-registering speakers for the hearing, if a public hearing is requested. To register to speak at the virtual hearing, please use the online registration form available at *https://www.epa.gov/stationary-sources-air-pollution/refractory-products-manufacturing-national-emissions-standards* 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 January 26, 2021. 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/refractory-products-manufacturing-national-emissions-standards.*

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 5 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 *hirtz.paula@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/refractory-products-manufacturing-national-emissions-standards.* 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 a special accommodation such as audio description, please pre-register for the hearing with the public hearing team and describe your needs by January 21, 2021. The EPA may not be able to arrange accommodations without advanced notice.

Docket. The EPA has established a docket for this rulemaking. Docket ID No. EPA–HQ–OAR–2020–0148 has been established for 40 CFR part 63, subpart SSSSS, Refractory Products Manufacturing. All documents in the docket 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 No. EPA–HQ–OAR–2020–0148. 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 any information that you consider to be CBI or other information whose disclosure is restricted by statue. This type of information should be submitted by mail 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.*

The EPA is temporarily suspending its Docket Center and Reading Room for public visitors, with limited exceptions, to reduce the risk of transmitting COVID–19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via *https://www.regulations.gov/* as there may be a delay in processing mail and faxes. Hand deliveries or couriers will be received by scheduled appointment only. For further information and updates on EPA Docket Center services, please visit us online at *https://www.epa.gov/dockets.*

The EPA continues to carefully and continuously monitor information from the CDC, local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID–19.

Submitting CBI. Do not submit information containing CBI to the EPA through *https://www.regulations.gov/* or email. 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, mark the outside of the digital storage media as CBI and then 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. 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. Send or deliver information identified as CBI only 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. EPA–HQ–OAR–2020–0148. Note that written comments containing CBI and submitted by mail may be delayed and no hand deliveries will be accepted.

Preamble acronyms and abbreviations. 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:

AEGL acute exposure guideline level
AERMOD air dispersion model used by the HEM–3 model
ASTM American Society for Testing and Materials
CAA Clean Air Act
CalEPA California EPA
CBI Confidential Business Information
CDX Central Data Exchange
CEDRI Compliance and Emissions Data Reporting Interface
CFR Code of Federal Regulations
ECHO Enforcement and Compliance History Online
EPA Environmental Protection Agency
ERPG emergency response planning guideline
ERT Electronic Reporting Tool
HAP hazardous air pollutant(s)
HCl hydrochloric acid
HEM–3 Human Exposure Model, Version 1.1.0
HF hydrogen fluoride
HI hazard index
HQ hazard quotient
HQREL hazard quotient recommended exposure limit
IBR incorporation by reference
IRIS Integrated Risk Information System
kg kilogram
km kilometer
MACT maximum achievable control technology
mg/m3 milligrams per cubic meter
MIR maximum individual risk
NAAQS National Ambient Air Quality Standards
NEI National Emission Inventory
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
PB–HAP hazardous air pollutants known to be persistent and bio-accumulative in the environment
PDF portable document format
POM polycyclic organic matter
PRA Paperwork Reduction Act
RBLC Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate Clearinghouse
REL reference exposure level
RfC reference concentration
RTO regenerative thermal oxidizer
RTR residual risk and technology review
SAB Science Advisory Board
SSM startup, shutdown, and malfunction
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
µg/m3 micrograms per cubic meter
URE unit risk estimate
VCS voluntary consensus standards

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

I. General Information

A. Does this action apply to me?

Refractory Products Manufacturing, the source category that is the subject of this proposal, is regulated under 40 CFR part 63, subpart SSSSS. The North American Industry Classification System (NAICS) codes for the refractory products industry are 327124 (clay) and 327125 (nonclay). We estimate that three major source facilities engaged in refractory products manufacturing would be affected by this proposal. 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. The Refractory Products Manufacturing source category was revised since 1992 when it originally appeared 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). At that time the source category was listed as Chromium Refractories Production and it was defined to include any facility engaged in producing chromium-containing refractories. Refractories were defined as heat-resistant materials used to build or line high-temperature industrial furnaces, and chromium-containing refractories were defined as refractories produced from chrome ore or chromic oxide along with other raw materials such as alumina, zirconia, silica, and magnesia. The category included, but was not limited to, facilities that manufacture magnesia-chrome, chrome-magnesite, chrome alumina, and chromic oxide refractories. Also included were facilities that manufactured either formed (bricks) or unformed (mortar, castables) chromium-containing refractories.

The source category was renamed in 1999 to Refractories Manufacturing in the National Emission Standards for Hazardous Air Pollutants (NESHAP): Revision of Source Category List and Schedule for Standards Under Section 112 of the Clean Air Act (see 64 FR 3025, November 18, 1999). By that time the EPA had obtained information from nonchromium refractory manufacturing plants that confirmed they were major sources of HAP emissions. Because the production of nonchromium refractories at those facilities would not be covered by other source categories on the source category list, the EPA decided to expand the scope of the source category to include the nonchromium refractory manufacturing sources.

The source category was subsequently renamed in 2002 to Refractory Products Manufacturing in the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Refractory Products Manufacturing, proposed rule preamble (67 FR 42108, June 20, 2002). In this proposed action, the EPA revised and further clarified the source category as provided by section 112(c) of the CAA. The source category is defined to include, but is not limited to, any facility that manufactures refractory bricks and shapes that are produced using an organic HAP compound, pitch-impregnated refractory products, chromium refractory products, and fired clay refractory products.

B. 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/refractory-products-manufacturing-national-emissions-standards.* 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 RTR program is available at *https://www.epa.gov/stationary-sources-air-pollution/risk-and-technology-review-national-emissions-standards-hazardous.*

The proposed changes to the CFR that would be necessary to incorporate the changes proposed in this action are set out in an attachment to the memorandum titled *Proposed Regulation Edits for 40 CFR part 63, subpart SSSSS,* available in the docket for this action (Docket ID No. EPA–HQ–OAR–2020–0148). The document includes the specific proposed amendatory language for revising the CFR and, for the convenience of interested parties, a redline version of the regulation. Following signature by the EPA Administrator, the EPA will also post a copy of this memorandum and the attachments to *https://www.epa.gov/stationary-sources-air-pollution/refractory-products-manufacturing-national-emissions-standards.*

II. Background

A. What is the statutory authority for this action?

The statutory authority for this action is provided by sections 112 and 301 of the CAA, as amended (42 U.S.C. 7401 *et seq.*).[1] Section 112 of the CAA establishes a two-stage regulatory process to develop standards for emissions of 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 (Docket ID No. EPA–HQ–OAR–2020–0148).

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

[1] In addition, section 301 of the CAA provides general authority for the Administrator to ''prescribe such regulations as are necessary to carry out his functions'' under the CAA.

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 non-air 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. 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 standards. 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 (the court) 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 (DC 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) [2] of approximately 1-in-10 thousand.'' (54 FR at 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.

The 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 floor. *Natural Resources Defense Council (NRDC)* v. *EPA,* 529 F.3d 1077, 1084 (DC Cir. 2008). *Association of Battery Recyclers, Inc.* v. *EPA,* 716 F.3d 667 (DC 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 standards for listed air toxics known to be emitted from the source category. *Louisiana Environmental Action Network (LEAN)* v. *EPA,* 955 F.3d 1088 (DC Cir. 2020).

B. What is the source category and how does the current NESHAP regulate its HAP emissions?

1. Source Category Description

The NESHAP for the Refractory Products Manufacturing source category was promulgated on April 16, 2003 (68 FR 18730), and is codified at 40 CFR part 63, subpart SSSSS. Minor amendments were made to the NESHAP related to the SSM provisions on April 20, 2006 (71 FR 20471). The Refractory Products Manufacturing NESHAP applies to each new, reconstructed, and existing affected source located at a refractory products manufacturing facility that is a major source of HAP emissions, is located at a major source of HAP emissions, or is part of a major source of HAP emissions. The affected sources include the following: shape dryers, curing ovens, and kilns that are used to manufacture refractory products that use organic HAP; shape preheaters, pitch working tanks, defumers, and coking ovens that are used to produce pitch-impregnated refractory products; kilns that are used to manufacture chromium refractory products; and kilns that are used to manufacture clay refractory products. A refractory products manufacturing facility is a plant site that manufactures refractory products, such as refractory bricks, refractory shapes, monolithics, kiln furniture, crucibles, and other materials used for lining furnaces and other high temperature process units. Refractory products manufacturing facilities typically process raw material by crushing, grinding, and screening; mixing the processed raw materials with binders and other additives; forming the refractory mix into shapes; and drying and firing the shapes.

Based on our search of the 2017 National Emission Inventory (NEI) (*www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei*) and the EPA's Enforcement and Compliance History Online (ECHO) database (*echo.epa.gov)* and a review of active air emissions permits, we estimate that three major source facilities are subject to the Refractory Products Manufacturing

[2] 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.

NESHAP. The three facilities that are subject to the Refractory Products Manufacturing NESHAP are listed in Appendix 1 to the memorandum titled *Technology Review for the Refractory Products Manufacturing Source Category,* in the Refractory Products Manufacturing Docket (Docket ID No. EPA–HQ–OAR–2020–0148).

2. HAP Emission Sources

The EPA estimated that a total of 167 refractory products manufacturing plants were operating in the U.S. in 2002. As a result of a comprehensive information collection request (ICR) that was sent out to the refractory products manufacturing industry at that time, the EPA found only eight of the 167 plants to be major sources of HAP and subject to the Refractory Products Manufacturing NESHAP (67 FR 42130, June 20, 2002). At that time, the EPA identified the primary sources of HAP emissions at most refractory products manufacturing plants to be the thermal process units used to manufacture the refractory products (67 FR 42130, June 20, 2002). These included the following:

- Shape dryers, curing ovens, and kilns used to produce clay and nonclay (organic resin-bonded) refractory products; and
- shape preheaters, pitch working tanks, defumers, and coking ovens used to produce pitch-bonded and pitch-impregnated refractory products.

In addition to these types of thermal process units at major sources, we identified other types of thermal process units at area source refractory products manufacturing plants not subject to the NESHAP. These area sources included those plants that manufactured refractory products from refractory ceramic fiber using a melting furnace and plants that manufactured refractory products with a fused-cast process using an electric arc furnace. (67 FR 42112, June 20, 2002)

Both HAP and criteria pollutants were identified as emissions from the thermal process units. The primary HAP emitted from refractory products manufacturing operations were identified as polycylic organic matter (POM), phenol, hydrochloric acid (HCl), hydrofluoric acid (HF), and ethylene glycol. POM emissions accounted for about 60 percent of the total annual HAP emissions, phenol accounted for 13 percent, HF for 10 percent, HCl for 7 percent and ethylene glycol for 7 percent. (68 FR 18744, April 16, 2003). The HAP emissions vary and depend on the raw materials used, the type of resin or additives used, and the type of thermal process unit used. The criteria pollutants emitted from refractory products manufacturing facilities include particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen oxides and volatile organic compounds.

The NESHAP groups refractory product manufacturing processes into four subcategories: Clay refractories, nonclay refractories, chromium refractories (nonclay), and pitch-impregnated refractories (nonclay).

A clay refractory product is defined as a refractory product that contains at least 10 percent uncalcined clay by weight prior to firing in a kiln. In this definition, the term ''clay'' means any of the following six classifications of clay defined by the U.S. Geological Survey (USGS): Ball clay, bentonite, common clay and shale, fire clay, fuller's earth, and kaolin. When clay is used as a raw material, HF and HCl emissions are emitted from kilns during firing due to the presence of chlorides and fluorides in the clay.

Nonclay refractories use raw materials such as alumina, magnesium oxide, and silicon carbide and typically require phenolic resins and other additives to hold the raw materials together. The phenolic resins and additives are needed to bind the raw materials and can result in organic HAP emissions from the curing ovens and kilns.

Kilns that are used to fire chromium refractory products can emit particulate chromium and other HAP metals. A chromium refractory product is a refractory product that contains at least 1 percent chromium by weight. The 2002 proposal (67 FR 42122) also identified inorganic HAP emissions from chromium refractory products kilns, which included hexavalent chromium, other chromium compounds, and other nonvolatile HAP metals.

Pitch-bonded and pitch-impregnated processes employ the use of coal tar and petroleum pitch, resulting in the emissions of POM from the curing and coking ovens, kilns, defumers, pitch working tanks, and shape preheaters.

In this action, the EPA estimates that a total of approximately 120 refractory products manufacturing plants are currently operating in the U.S. and three are major sources subject to the Refractory Products Manufacturing NESHAP. The three major sources manufacture clay and nonclay refractory products and can be grouped into the clay and nonclay subcategories. We also identified the same primary sources of HAP emissions at these refractory products manufacturing plants as the thermal process units used to manufacture the refractory products, including the shape dryers, curing ovens, and kilns used to produce clay and nonclay (organic resin-bonded) refractory products. The three major sources currently operating in the U.S. do not produce chromium, pitch-bonded, or pitch-impregnated products. Consequently, the thermal process units associated with these types of refractories (*i.e.,* shape preheaters, pitch working tanks, defumers, and coking ovens used to produce pitch-bonded and pitch-impregnated refractory products) are not used in the production of refractory products by the three major source facilities, and the HAP associated with these thermal process units are not emitted by the three major source facilities, except for trace amounts of POM. The primary HAP identified for the three major source facilities in this action are HCl and HF. Trace amounts of benzene, bis(2-ethylhexyl) phthalate, POM, and phenol are also reported to be emitted by these facilities from the phenolic resins and additives.

3. NESHAP Requirements for Control of HAP

The EPA estimated that the Refractory Products Manufacturing NESHAP requirements would reduce the emissions of HAP from the source category by 137 tpy (68 FR 18730, April 16, 2003). The Refractory Products Manufacturing NESHAP specifies emission limits, operating limits, and work practice standards for existing affected thermal process sources and for new and reconstructed affected thermal process sources that emit organic HAP according to refractory product type.

Existing and new nonclay refractories thermal process sources have two options for meeting a total hydrocarbon (THC) limit, to either (1) meet a THC concentration limit of 20 parts per million by volume, dry basis (ppmvd), corrected to 18 percent oxygen, or (2) reduce the THC mass emissions by at least 95 percent. Compliance with the THC emission limit is calculated differently for continuous and batch thermal process sources. For continuous process sources of organic HAP, compliance is based on meeting the THC emission limit as a 3-hour block average, and for batch process sources, compliance is based on meeting the THC emission limit as the average of 3-hour peak THC emission periods over two test runs.

Existing clay refractories and existing and new chromium refractory products kilns are required to use natural gas or equivalent fuel to limit metal HAP. Existing clay refractory product kilns must use natural gas to limit HF and HCl emissions. Natural gas or equivalent fuel must be used as the kiln fuel at all

times except during periods of natural gas curtailment or other times when natural gas is not available.

New clay refractory product kilns are required to meet numeric limits for HF and HCl. For new continuous clay refractory product kilns, the HF limit is 0.038 pounds per ton (lb/ton) of uncalcined clay processed or a reduction in HF mass emissions by at least 90 percent and an HCl limit of 0.18 lb/ton of product or a reduction of uncontrolled HCl emissions by at least 30 percent. For new batch clay refractory product kilns, the NESHAP requires a reduction in HF emissions by at least 90 percent and a reduction in HCl emissions by at least 30 percent.

The NESHAP also establishes operating limits for thermal process sources and control devices, which are based on operating parameters established during performance testing. For thermal process sources emitting organic HAP, the NESHAP requires operating limits on the organic HAP processing rate and the operating temperature of the control devices (thermal and catalytic oxidizers). For new clay refractory products kilns, operating limits are specified for control devices, such as dry limestone absorber, dry lime injection fabric filters, dry lime scrubber/fabric filters, and wet scrubbers. The NESHAP also requires an operation, maintenance and monitoring (OM&M) plan for each continuous parameter monitoring system (CPMS).

The NESHAP also establishes work practice standards for thermal process sources associated with pitch-bonded and pitch-impregnated refractory product operations. As stated above, these refractory products are not manufactured by the three major sources currently operating in the U.S.

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

For the risk modeling portion of this RTR, the EPA used industry-supplied data and data from the 2017 NEI. The NEI is a database that contains information about sources that emit criteria air pollutants, their precursors, and HAP. The database includes estimates of annual air pollutant emissions from point, nonpoint, and mobile sources in the 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. The EPA collects this information and releases an updated version of the NEI database every 3 years. The NEI includes the data necessary for conducting risk modeling, including annual HAP emissions estimates from individual emission points at facilities and the associated emission release parameters. We used NEI emissions and data supplied by the three major source facilities as the primary data to develop the model input files for the risk assessment for this source category. Detailed information on the development of the modeling file for the Refractory Products Manufacturing source category can be found in the memorandum titled *Emissions Data Used to Develop the Refractory Products Manufacturing Risk and Technology Review (RTR) Risk Modeling Input Files,* in Appendix 1 to the *Residual Risk Assessment for the Refractory Products Manufacturing Source Category in Support of the 2020 Risk and Technology Review Proposed Rule* (hereafter referred to as the *Refractory Products Risk Assessment Report*), in the Refractory Products Manufacturing Docket (Docket ID No. EPA–HQ–OAR–2020–0148).

For both the risk modeling and technology review portions of this RTR, we gathered additional data from the facilities, including stack test reports and operating permits regarding emission points, air pollution control devices, and process operations. We collected permits and supporting documentation directly from state permitting authorities or through state-maintained online databases. We contacted facility representatives directly to confirm and clarify the sources of emissions that were reported in the NEI. No formal ICR was conducted for this action.

The EPA's ECHO database was used to identify facilities that were potentially subject to the NESHAP. The ECHO database provides integrated compliance and enforcement information for approximately 800,000 regulated facilities nationwide. Using the search feature in ECHO, the EPA identified facilities that could potentially be subject to the NESHAP. We then reviewed operating permits for these facilities to confirm that they were major sources of HAP with emission sources subject to the NESHAP that is the subject of this action.

For the technology review, we reviewed various information sources regarding emission sources that are currently regulated by the Refractory Products Manufacturing NESHAP to support the technology review. The information sources included the Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate Clearinghouse (RBLC); state regulations; facility operating permits; regulatory actions, including technology reviews promulgated for other similar NESHAP subsequent to the Surface Coating of Metal Cans NESHAP; and discussions with individual refractory product manufacturing facilities. As a result of the technology review, we are proposing additional control measures based on the best practices of one facility in the source category. Additional information about the data collection activities for the technology review and the technology review results are discussed in section IV.D of this preamble and in the technology review memorandum titled *Technology Review for the Refractory Products Manufacturing Source Category,* July 2020 (hereafter referred to as the *Refractory Products Technology Review Memo*), available in Docket ID No. EPA–HQ–OAR–2020–0148.

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

We also reviewed the NESHAP for other similar source categories that were promulgated after the Refractory Products Manufacturing NESHAP as part of the technology review for this source category. We reviewed the regulatory requirements and/or technical analyses associated with these later regulatory actions to identify any practices, processes, and control technologies considered in those rulemakings that could be applied to emission sources in the Refractory Products Manufacturing source category, as well as the costs, non-air impacts, and energy implications associated with the use of those technologies. We also reviewed information available in industry trade publications such as the *Refractories World Forum.* These publications provided information on trends in refractory technologies that can affect emissions from the Refractory Products Manufacturing source category. This literature review did not identify industry trends that would affect emissions from the sources subject to this NESHAP. Additional details regarding our review of these information sources are contained in the memorandum, *Technology Review for Refractory Products Manufacturing NESHAP,* available in Docket ID No. EPA–HQ–OAR–2020–0148.

III. Analytical Procedures and Decision-Making

In this section, we describe the analyses performed to support the proposed decisions for the RTRs 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 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.[3] 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:

> The policy chosen by the Administrator permits consideration of multiple measures of health risk. Not only can the MIR figure be considered, but also incidence, the presence of noncancer health effects, and the uncertainties of the risk estimates. In this way, the effect on the most exposed individuals can be reviewed as well as the impact on the general public. These factors can then be weighed in each individual case. This approach complies with the Vinyl Chloride mandate that the Administrator ascertain an acceptable level of risk to the public by employing his expertise to assess available data. It also complies with the Congressional intent behind the CAA, which did not exclude the 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 judgment, believes are appropriate to determining what will ''protect the public health.''

(54 FR at 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 the: ''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 category under review, mobile source emissions, natural source emissions, persistent environmental pollution, or atmospheric transformation in the vicinity of the sources in the category.

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.'' [4]

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 are concerned about the 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

[3] 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.

[4] Recommendations of the SAB Risk and Technology Review Methods Panel are provided in their report, which is available at: *http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf.*

facility-wide estimates. Such aggregate or cumulative assessments would compound those uncertainties, making the assessments too unreliable.

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 non-air 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 the NESHAP (*i.e.,* the 2003 Refractory Products Manufacturing 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 category 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 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 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 seven 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 Refractory Products Manufacturing Source Category in Support of the 2020 Risk and Technology Review Proposed Rule.* The methods used to assess risk (as described in the seven 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; [5] and described in the SAB review report issued in 2010. They are also consistent with the key recommendations contained in that report.

[5] 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,* June 2009. EPA–452/R–09–006. *https://www3.epa.gov/airtoxics/rrisk/rtrpg.html.*

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

The actual emissions and the emission release characteristics for one of the three major source facilities were obtained primarily from the 2017 NEI. The actual emissions and the emission release characteristics for the other two facilities were developed by the EPA based on data provided by the facilities and refractory emission factors. Additional information on the development of the modeling file for each facility, including the development of the actual emissions estimates and emissions release characteristics, can be found in the memorandum titled *Emissions Data Used to Develop the Refractory Products Manufacturing Risk and Technology Review (RTR) Risk Modeling Input Files,* found in Appendix 1 to the *Refractory Products Risk Assessment Report,* available in Docket ID No. EPA–HQ–OAR–2020–0148.

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 1992, 1998 through 1999, 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 Refractory Products Manufacturing sources with compliance test data, we determined allowable emissions by calculating a multiplier for each emission source. Based on the data in compliance test reports, we calculated the multipliers by comparing actual emissions and control efficiencies to the applicable Refractory Products

Manufacturing NESHAP emission limit. For some sources compliance was determined by comparing the concentration of THCs to the emission limit of 20 ppmvd, corrected to 18 percent oxygen, and the emissions were measured at the outlet of the control device. For other sources, compliance was determined by comparing the THC control efficiency to the THC control efficiency requirement of 95 percent, and the emissions were measured at the inlet and outlet of the control device accordingly. For sources without compliance test data, we assumed the actual and the allowable emissions were equal. Additional information on the development of the allowable emissions can be found in the memorandum titled *Emissions Data Used to Develop the Refractory Products Manufacturing Risk and Technology Review (RTR) Risk Modeling Input Files,* found in Appendix 1 to the *Refractory Products Risk Assessment Report,* available in Docket ID No. EPA–HQ–OAR–2020–0148.

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–3).[6] The HEM–3 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 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–3 model, is one of the EPA's preferred models for assessing air pollutant concentrations from industrial facilities.[7] To perform the dispersion modeling and to develop the preliminary risk estimates, HEM–3 draws on three data libraries. The first is a library of meteorological data, which is used for dispersion calculations. This library includes 1 year (2016) of hourly surface and upper air observations from 824 meteorological stations selected to provide coverage of the U.S. and Puerto Rico. A second library of U.S. Census Bureau census block[8] 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 both the analysis supporting the 1989 Benzene NESHAP (54 FR 38044, September 14, 1989) and 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 ($\mu g/m^3$)) 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 the 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[9] 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

[6] For more information about HEM–3, go to *https://www.epa.gov/fera/risk-assessment-and-modeling-human-exposure-model-hem.*

[7] 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).

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

[9] 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://yosemite.epa.gov/sab/sabproduct.nsf/214C6E915BB04E148525 70CA007A682C/$File/ecadv02001.pdf.*

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 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,[10] 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 Refractory Products Manufacturing Source Category in Support of the 2020 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 proposal 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,[11] 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.'' [12] 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.[13] 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 parts per million or milligrams per cubic meter) 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 for emergency planning and are intended as health-based guideline concentrations for single exposures to chemicals.'' [14] *Id.* at 1. The ERPG–1 is defined as ''the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to

[10] See, *e.g.,* U.S. EPA. *Screening Methodologies to Support Risk and Technology Reviews (RTR): A Case Study Analysis* (Draft Report, May 2017. *https://www.epa.gov/stationary-sources-air-pollution/risk-and-technology-review-national-emissions-standards-hazardous*).

[11] 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 Refractory Products Manufacturing Source Category in Support of the 2020 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.

[12] 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.*

[13] 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*).

[14] *ERPGS Procedures and Responsibilities.* March 2014. American Industrial Hygiene Association. Available at: *https://www.aiha.org/get-involved/AIHAGuidelineFoundation/EmergencyResponsePlanningGuidelines/Documents/ERPG%20Committee%20Standard%20Operating%20Procedures%20%20-%20March%202014%20Revision%20%28Updated%2010-2-2014%29.pdf.*

1 hour without experiencing other than mild transient adverse health effects or without perceiving a clearly defined, objectionable odor.'' *Id.* at 2. Similarly, the ERPG–2 is defined as ''the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.'' *Id.* at 1.

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 this source category, we estimated acute emissions by determining acute multipliers, which we then multiplied by the actual emissions. The acute multipliers for all sources were based on data from compliance tests for the specific sources, when available. For the batch processes, which were tested for 8 to 18 hours, we determined the acute multiplier by calculating mass emissions for each hour of the test and then taking the ratio of the maximum hourly emission rate to the average hourly emission rate. For sources that were tested for three 1-hour test runs, we determined the acute multiplier as the ratio of the mass emissions for the highest test run to the three-run average. The acute emissions were converted from ton per hour to ton per year for the risk modeling input file using 8,760 hours per year. If compliance test results were not available, we applied source specific acute multipliers developed for other similar sources to estimate the acute emissions. Additional information on the development of the acute emissions can be found in the memorandum titled *Emissions Data Used to Develop the Refractory Products Manufacturing Risk and Technology Review (RTR) Risk Modeling Input Files,* found in Appendix 1 to the *Refractory Products Risk Assessment Report,* available in Docket ID No. EPA–HQ–OAR–2020–0148.

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 category 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 Refractory Products Manufacturing source category, we identified PB–HAP emissions of arsenic, cadmium, POM, mercury (divalent mercury and methyl mercury) and lead, 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 (SV).''

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 SV 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 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 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 [15]) and locally grown or raised foods (90th percentile consumption of locally grown or raised foods for the farmer and gardener scenarios [16]). If PB–HAP emission rates do not result in a Tier 2 SV 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.

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.[17] 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 *Refractory Products Risk Assessment Report,* which is available in the docket for this action.

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

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

[17] 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.

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 HCl and HF.

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 (NOAEL). 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 *Refractory Products Risk Assessment Report,* which is 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 Refractory Products Manufacturing source category emitted any of the environmental HAP. For the Refractory Products Manufacturing source category, we identified emissions of arsenic, cadmium, HCl, HF, lead, mercury (divalent mercury and methyl mercury), and POM. Because one or more of the environmental HAP evaluated are emitted by at least one facility in the source category, we proceeded to the second step of the evaluation.

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 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–3) 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 SV 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 *Refractory Products Risk Assessment Report,* which is 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 the 2017 NEI. The source category records of that NEI dataset were removed, evaluated, and updated 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, it was placed back with the remaining records from the NEI for that facility. 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 proposal. 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 *Refractory Products Risk Assessment Report,* 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 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 *Refractory Products Risk Assessment Report,* which is available in the docket for this action. If a multipathway site-specific assessment was performed for this source category, a full discussion of the uncertainties associated with that assessment can be found in Appendix 11 of that document, *Site-Specific Human Health Multipathway Residual Risk Assessment Report.*

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 reflect short-term fluctuations based on actual emissions testing data. The estimates of peak hourly emission

rates for the acute effects screening assessment were also based on actual emissions testing data.

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,* pages 1 through 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.[18] 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.[19] 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,[20] 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 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 this 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

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

[19] 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.

[20] 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.

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.[21]

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 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

[21] 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.

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 (d)(3)?

In this action, we are proposing standards for previously unregulated HAP for existing sources in the clay and nonclay refractory subcategories pursuant to CAA sections 112(d)(2) and (3).[22] For existing clay refractory sources, we are proposing a MACT floor limit for (non-mercury) metal HAP and a MACT floor limit for mercury (in addition to the existing NESHAP work practice standard to use natural gas as fuel for existing clay refractory sources). For existing nonclay refractory sources, we are proposing a work practice standard to use natural gas as fuel to limit metal HAP emissions as provided in CAA section 112(h) in lieu of a numerical emissions standard (in addition to the existing NESHAP THC limit for existing nonclay refractory sources).

The results and proposed decisions based on the analyses performed pursuant to CAA sections 112(d)(2) and (3) are presented below.

1. Clay Refractory Products

a. Background

For existing clay refractory sources, the 2002 Refractory Products Manufacturing NESHAP proposal preamble identifies the primary HAP emissions as HF and HCl from the manufacture of clay products. The NESHAP requires control of HF/HCl with a work practice to use natural gas as a clean fuel replacement for coal, fuel oil, and waste-derived fuels that were used in kilns and ovens at that time. More recent available data in emission test reports for these sources reviewed for this action confirm trace (but measurable) amounts of (non-mercury) metal HAP and mercury emissions. Based on this data, we are proposing MACT floor limits for these HAP for new and existing clay refractory sources. We propose to set a limit for mercury and a limit for PM as a surrogate for (non-mercury) metal HAP. We are setting a limit for PM as a surrogate for (non-mercury) metal HAP because the metal HAP are contained in the PM and the control techniques that would be used to control PM will equally control (non-mercury) metal HAP. We have used PM as a surrogate for (non-mercury) metal HAP for other rules with similar processes (*e.g.,* Portland Cement Manufacturing, Lime Manufacturing, Clay Ceramics Manufacturing).

b. Proposed MACT Standards

Pursuant to CAA section 112(d)(3), we are proposing MACT floor limits of 9.5 pounds per hour for PM and 18 micrograms per dry standard cubic meter (µg/dscm), corrected to 18 percent oxygen, for mercury from each existing kiln that is used to produce clay refractory products. Because there are fewer than 30 kilns used to produce clay refractory products in the source category, CAA section 112(d)(3)(B) directs the EPA to base the MACT floor on the best performing five sources for which the EPA has data. For the clay refractory kiln subcategory, we had data for only two clay refractory kilns, so we considered all sources for which we had data as the best performing sources in the subcategory. To calculate the limits, we used the test data from the two clay refractory kilns to calculate the average emissions for each kiln. We then determined upper prediction limits (UPLs) that incorporate the potential variability in future measurements to develop the PM and mercury standards.

Pursuant to CAA section 112(d)(3) requirements for new sources, the standard for new sources shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source. We are proposing MACT floor limits of 3.1 pounds per hour for PM and 6.1 µg/dscm, corrected to 18 percent oxygen, for mercury from each new kiln that is used to produce clay refractory products. These limits were derived using the same test data as the existing source limits but are based on the UPL determinations for the best-performing kiln rather than both existing kilns for which we have data.

The EPA's MACT analyses use the UPL approach to identify the average emission limitation achieved by the best performing sources. The EPA uses this approach because it incorporates the average performance of the best performing sources as well as the variability of the performance during testing conditions. 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. In other words, the UPL estimates what the upper bound of future values will be based upon present or past background data. 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. For more details regarding how these limits were derived, see the technical memorandum titled *Development of Proposed Standards and Impacts for the Refractory Products Manufacturing NESHAP,* located in the docket for this rule.

To demonstrate compliance with the emission limits, the EPA is proposing initial and repeat 5-year performance testing for the regulated pollutants, continuous parameter monitoring, and daily visible emissions (VE) checks. Owners and operators whose clay refractory products kilns are equipped with a fabric filter to reduce PM (as a surrogate for metal HAP) have the option of demonstrating compliance using a bag leak detection system instead of daily VE checks.

c. Consideration of Beyond-the-Floor Options

The EPA also evaluated the beyond-the-floor option of requiring all existing sources to meet the proposed new source MACT standards for mercury and PM (as a surrogate for total (non-mercury) metal HAP). We assume an uncontrolled kiln would need a fabric filter for control of PM and an activated carbon injection and fabric filter system for control of mercury to meet the new source standards. For the total (non-mercury) metal HAP beyond-the-floor option, we estimate the total capital cost would be $1.74 million, the annual cost would be $649,000, and the control would achieve (non-mercury) metal HAP reductions of 0.015 tpy, for a cost effectiveness of $42.7 million per ton of (non-mercury) metal HAP removed. For the mercury beyond-the-floor option, we estimate the total capital cost would be $1.84 million, the annual cost would be

[22] 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.

$740,000, and the control would achieve mercury reductions of 0.0023 tpy, for a cost effectiveness of $321 million per ton of mercury removed.

We conclude that the costs of the controls are not reasonable relative to the level of emission reduction achieved for either the mercury or total (non-mercury) metal HAP beyond-the-floor options. In addition, these controls would create additional solid waste, as there would be a need to dispose of the collected metal-contaminated dust. Therefore, we are not proposing beyond-the-floor limits for mercury or total non-mercury metal HAP and are proposing standards based on the MACT floor. See the technical memorandum titled *Development of Proposed Standards and Impacts for the Refractory Products Manufacturing NESHAP,* located in the docket for this rule, for details regarding the derivation of the cost and emission estimates for the beyond-the-floor option.

2. Nonclay Refractory Products That Use Organic HAP

For existing nonclay refractory sources, the 2002 Refractory Products Manufacturing NESHAP proposal preamble identifies organic HAP as the primary emissions from the manufacture of nonclay products that include organic resin binders. The NESHAP requires control of organic HAP with a THC limit for these sources. Sources currently employ the use of thermal oxidizers, regenerative thermal oxidizers, and catalytic oxidizers to meet the THC limit. However, the NESHAP does not require sources to use natural gas as fuel for sources in this subcategory because metal HAP emissions were determined to be below measurable quantities due to the use of purified nonclay raw materials. Available HAP data for these sources in the 2017 NEI were found to be outdated and not reflective of current operating conditions. The 2017 NEI included measurable PM emissions for these existing nonclay refractory sources, and the PM would be expected to have trace amounts of metal HAP; however, we have no emission stack test data to indicate measurable emissions of metal HAP for these existing nonclay refractory sources.[23] Therefore, we are proposing a work practice standard to use natural gas as fuel for existing nonclay refractory sources to limit metal HAP emissions in lieu of a numerical emissions standard as the MACT floor level of control in accordance with CAA section 112(h). Because we expect HAP metals to be emitted in unmeasurable quantities based on the purified raw materials used and we have no emission stack test data to indicate measurable emissions of metal HAP for these existing nonclay refractory sources, we could not identify a beyond the floor measure that would obtain further emission reductions.

B. What are the results of the risk assessment and analyses?

As described in section III of this preamble, for the Refractory Products Manufacturing source category, we conducted a risk assessment for all HAP emitted. We present results of the risk assessment briefly below and in more detail in the *Refractory Products Risk Assessment Report,* in the Docket for this action (Docket ID No. EPA–HQ–OAR–2020–0148).

1. Chronic Inhalation Risk Assessment Results

Table 1 below provides a summary of the results of the inhalation risk assessment for the source category. For more detail about the MACT-allowable emission levels, see Appendix 1 to the *Refractory Products Risk Assessment Report,* in the Docket for this action.

TABLE 1—REFRACTORY PRODUCTS MANUFACTURING SOURCE CATEGORY INHALATION RISK ASSESSMENT RESULTS

Risk assessment	Maximum individual cancer risk (in 1 million)		Estimated population at increased risk of cancer ≥1-in-1 million		Estimated annual cancer incidence (cases per year)		Maximum chronic non-cancer TOSHI [1]		Maximum screening acute noncancer HQ [2]
	Based on actual emissions	Based on allowable emissions	Based on actual emissions	Based on allowable emissions	Based on actual emissions	Based on allowable emissions	Based on actual emissions	Based on allowable emissions	Based on actual emissions
Source Category	0.7	0.7	0	0	0.0003	0.0003	0.04	0.04	HQREL = 0.09
Whole Facility	0.7	.....	0	.....	0.0004	.....	0.04	.....	.....

[1] The target organ specific hazard index (TOSHI) is the sum of the chronic noncancer HQs for substances that affect the same target organ or organ system.
[2] The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop HQ values.

The results of the inhalation risk modeling, as shown above, indicate that the maximum individual cancer risk based on actual and allowable emissions (lifetime) is 0.7-in-1 million (driven by trace amounts of chromium, arsenic, nickel, and cadmium emissions from tunnel kilns) and the total estimated annual cancer incidence (national) from these facilities based on actual and allowable emission levels is 0.0003 excess cancer cases per year or one case every 3,333 years. The maximum chronic noncancer TOSHI value based on actual and allowable emissions is 0.04 (driven by HF from tunnel kilns).

2. Screening Level Acute Risk Assessment Results

Table 1 of this preamble shows the acute risk results for the Refractory Products Manufacturing source category. The screening analysis for acute impacts was based on an estimate of acute emissions developed for each emissions source using compliance test report data and engineering calculations. The maximum screening acute noncancer HQ value (off-facility site) is 0.09 (driven by HF). For more detailed acute risk screening results, refer to the *Refractory Products Risk Assessment Report,* in the Docket for this action.

3. Multipathway Risk Screening Results

The emissions data for Refractory Products Manufacturing source category indicate that five PB–HAP are emitted by sources within this source category: Arsenic, cadmium, POM, mercury (divalent mercury and methyl mercury), and lead. The cadmium emissions from these facilities did not exceed the Tier 1 multipathway SV of 1 for cancer or noncancer. The arsenic, methyl mercury, and POM emissions exceeded the Tier 1 multipathway SV of 1 for cancer. Therefore, a Tier 2 screening

[23] Thus, while we believe that there are metal HAP emissions, the lack of data showing measurable emissions leads the EPA to conclude that the application of measurement methodology to this class of sources is not practicable due to technological and economic limitations. See CAA 112(h)(2)(B).

assessment was conducted for arsenic, menthyl mercury and POM. Emissions of arsenic, POM, and methyl mercury from these facilities did not exceed the Tier 2 multipathway SV of 1 for cancer. The Tier 2 noncancer screening assessment resulted in an SV less than 1 for mercury emissions.

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 2 for a non-carcinogen can be interpreted to mean that we are confident that the HQ would be lower than 2. Similarly, a Tier 2 cancer SV of 5 means that we are confident that the risk is lower than 5-in-1 million. Our confidence comes from the conservative, or health-protective, assumptions encompassed in the screening tiers: we choose inputs from the upper end of the range of possible values for the influential parameters used in the screening tiers, and we assume that the exposed individual exhibits ingestion behavior that would lead to a high total exposure. Based upon the results of this screening assessment no further screening or site-specific assessments were conducted for this source category.

In evaluating the potential for multipathway effects from emissions of lead, modeled maximum annual-average lead concentrations were compared to the NAAQS for lead (0.15 μg/m3). Results of this analysis confirmed that the NAAQS for lead would not be exceeded by any facility.

4. Environmental Risk Screening Results

As described in section III.A of this preamble, we conducted an environmental risk screening assessment for the Refractory Products Manufacturing source category for the following pollutants: Arsenic, cadmium, HCl, HF, lead, mercury (divalent mercury and methyl mercury), and POM.

In the Tier 1 screening analysis for PB–HAP (other than lead, which was evaluated differently), arsenic, cadmium, divalent mercury, and POM had no Tier 1 exceedances for any ecological benchmark. Methyl mercury emissions at one facility had a Tier 1 exceedance for the surface soil NOAEL (avian ground insectivores) by a maximum SV of 2. A Tier 2 screening assessment was performed for methyl mercury. Methyl mercury had no Tier 2 exceedances for any ecological benchmark.

For lead, 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 (*i.e.,* each off-site data point in the modeling domain) was below the ecological benchmarks for all facilities. For HF, the maximum facility SV (based on the average concentration of all off-site data points over the modeling domain) was well below 1 (0.007) and the maximum area that exceeded the ecological benchmark was only 0.002 percent of the modeled area.

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

As shown in Table 1 of this document, the maximum facility-wide cancer MIR is 0.7-in-1 million, driven by chromium, arsenic, nickel, and cadmium emissions from tunnel kilns. The total estimated cancer incidence from the whole facility is 0.0004 excess cancer cases per year, or one excess case in every 2,500 years. No people were estimated to have cancer risks above 1-in-1 million from exposure to HAP emitted from both MACT and non-MACT sources at the three facilities in this source category. The maximum facility-wide TOSHI for the source category is estimated to be 0.04, driven by HF emissions from tunnel kilns.

6. What demographic groups might benefit from this regulation?

To examine the potential for any environmental justice issues that might be associated with the source category, we performed a demographic analysis, which is an assessment of risks to individual demographic groups of the populations living within 5 km and within 50 km of the facilities. In the analysis, we evaluated the distribution of HAP-related cancer and noncancer risks from the Refractory Products Manufacturing source category across different demographic groups within the populations living near facilities.[24]

Results of the demographic analysis indicate that the minority population is significantly lower within 5 km of the facilities than the national percentage (18 percent versus 38 percent). This difference is accounted for by smaller population percentages around the facilities for all minority demographic groups. Specifically, African American (6 percent versus 12 percent nationally), Native American (0.1 percent versus 0.8 percent nationally), Other and Multiracial (5 percent versus 7 percent nationally), and Hispanic or Latino (6 percent versus 18 percent nationally). In addition, the percentage of the population living within 5 km of facilities in the source category is lower than the corresponding national percentage for the demographic groups, ''Over 25 Without a HS Diploma'' (10 percent versus 14 percent nationally) and ''Below the Poverty Level'' (11 percent versus 14 percent nationally). When examining the risk levels of those exposed to emissions from Refractory Products Manufacturing facilities, we find that no one is exposed to a cancer risk at or above 1-in-1 million or to a chronic noncancer TOSHI greater than 1.

The methodology and the results of the demographic analysis are presented in a technical report titled *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Refractory Products Manufacturing Source Category Operations,* September 2020 (hereafter referred to as the *Refractory Products Manufacturing Demographic Analysis Report*), in the docket for this action.

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 all health risk 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, the extent of noncancer risks, the distribution of cancer and noncancer risks in the exposed population, and risk estimation uncertainties (54 FR 38044, September 14, 1989).

For the Refractory Products Manufacturing source category, the risk analysis indicates that cancer risk due to actual emissions or allowable emissions is 0.7-in-1 million. The risks are considerably less than 100-in-1 million, which is the presumptive upper limit of acceptable risk. The risk analysis also

[24] Demographic groups included in the analysis are: White, African American, Native American, other races and multiracial, Hispanic or Latino, children 17 years of age and under, adults 18 to 64 years of age, adults 65 years of age and over, adults without a high school diploma, people living below the poverty level, people living two times the poverty level, and linguistically isolated people.

shows we did not identify a potential for adverse chronic noncancer health effects. The acute noncancer risks based on actual emissions are low at an HQ of less than 1 (based on the REL) for HF. Therefore, we find there is little potential concern of acute noncancer health impacts from actual emissions. In addition, the risk assessment indicates no significant potential for multipathway health effects.

Considering all of the health risk information and factors discussed above, including the uncertainties discussed in section III.C.7 of this preamble, we propose to find that the risks from the Refractory Products Manufacturing source category are acceptable.

3. Ample Margin of Safety Analysis

We are proposing that the risks from the Refractory Products Manufacturing source category are acceptable. There are no individuals in the exposed population with lifetime cancer risks above 1-in-1 million as a result of actual or allowable emissions from this category. In addition, in our risk analysis we did not identify a potential for adverse chronic noncancer, acute noncancer, or multipathway health effects. Therefore, we are proposing that the current standards provide an ample margin of safety to protect public health.

4. Adverse Environmental Effect

The emissions data for the Refractory Products Manufacturing source category indicate that the following environmental HAP are emitted by this category: Arsenic, cadmium, HCl, HF, lead, mercury (divalent mercury and methyl mercury), and POM. The screening-level evaluation of the potential for adverse environmental effects associated with emissions of these environmental HAP from the Refractory Products Manufacturing source category indicated that there are no exceedances of Tier 2 SVs for PB–HAP, no exceedances of the average modeled concentration around each facility (*i.e.,* the average concentration of all off-site data points in the modeling domain) for acid gases, and for lead we did not estimate any exceedances of the secondary lead NAAQS. In addition, we are unaware of any adverse environmental effects caused by HAP emitted by this source category. Therefore, we do not expect there to be an adverse environmental effect as a result of HAP emissions from this source category, and taking into consideration costs, energy, safety, and other relevant factors, we are proposing that it is not necessary to set a more stringent standard to prevent an adverse environmental effect.

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

As described in section III.B of this preamble, our technology review focused on identifying developments in practices, processes, and control technologies for the Refractory Products source category. We reviewed various information sources regarding emission sources that are currently regulated by the Refractory Products Manufacturing NESHAP to support the technology review. The information sources included the following: The RBLC; state regulations; facility operating permits; regulatory actions, including technology reviews promulgated for other similar NESHAP subsequent to the Surface Coating of Metal Cans NESHAP; and discussions with individual refractory product manufacturing facilities.

A brief discussion of our review of these various information sources follows. Based on our review of facility operating permits and discussions with individual refractory product manufacturing facilities, we identified an advance in practice that we are proposing under CAA section 112(d)(6) in this action.

Our search of the RBLC database for improvements in refractory products manufacturing technologies did not identify any new developments in practices, processes, or control technologies for the Refractory Products Manufacturing source category under CAA section 112(d)(6).

We also reviewed requirements for other similar source categories. During development of the Refractory Products Manufacturing NESHAP, we identified two other source categories that operate kilns that are similar in design and operation to kilns that manufacture clay refractory products: The Clay Ceramics Manufacturing Industry and the Brick and Structural Clay Products Manufacturing Industry. Since the promulgation of the Refractory Products Manufacturing NESHAP, the NESHAP for these two other source categories were vacated, and new NESHAP for Brick and Structural Clay Products Manufacturing Industry and NESHAP for Clay Ceramics Manufacturing Industry were promulgated on October 26, 2015 (80 FR 65470). However, the control devices have not changed since the promulgation of the Refractory Products Manufacturing NESHAP. Therefore, no developments in practices, processes, and control technologies were identified in the NESHAP for Brick and Structural Clay Products Manufacturing Industry and NESHAP for Clay Ceramics Manufacturing Industry that were not considered during the Refractory Products Manufacturing NESHAP development.

We also contacted representatives for the three major source facilities subject to the Refractory Products Manufacturing NESHAP and the industry trade association, The Refractories Institute, and asked them to identify facility-specific developments in practices, processes, and control technologies. Two of the three facilities indicated they had not made changes in raw materials or manufacturing practices and processes because such changes would detrimentally affect their products. One facility had installed a wet scrubber to control opacity/particulate matter (a surrogate for metal HAP) emitted by its tunnel kilns used to manufacture both clay and nonclay refractory products. Since wet scrubbers were previously considered during the Refractory Products Manufacturing NESHAP development, we did not consider this to be a development in control technology.

We also conducted a review of the state operating permits for the three major source facilities that are subject to the Refractory Products Manufacturing NESHAP and three synthetic area source refractory facilities to determine whether any are using technologies that exceed the MACT level of control or are using technologies that were not considered during the development of the original NESHAP. We found the HAP control devices described in the permits were considered and included in the 2003 Refractory Products Manufacturing NESHAP for the relevant refractory products. Therefore, the permit review did not identify any new developments in processes or control technologies for the refractory manufacturing source category under CAA section 112(d)(6).

Based on our review of facility operating permits and discussions with individual refractory product manufacturing facilities, we identified an advance in practice that we are proposing in this action. The current NESHAP has a work practice standard that applies during periods of scheduled maintenance of emission controls for continuous kilns during bypass periods. We are proposing to limit the provision to THC emission controls and add additional requirements to reflect the best practices for one facility as part of the technology review required by CAA section 112(d)(6). In addition to the best practices, we are proposing an additional reporting requirement. We

are aware of only one major source facility that uses this provision and will be affected by these proposed requirements.

To comply with current NESHAP work practice standard, the owner or operator must request approval from the Administrator to bypass the control device, minimize THC emissions during the period when the kiln is operating and the control device is out of service, and minimize the amount of time that the kiln is operating and the control device is out of service. Approval from the Administrator must be requested in advance for each scheduled maintenance event of the control device if the bypass of the control device is required to conduct the maintenance. The procedures for minimizing the THC emissions during the time the control device is out of service and the amount of time the control device is out of service for maintenance must be included in the facility's OM&M plan, and records of the maintenance performed are also required.

Consistent with the demonstrated best practices for one facility, we are proposing a revision to the existing requirements to limit the number of hours bypass of the emission controls can occur to no more than 750 hours per kiln per year. If the control being bypassed is for THC control, the facility is also required to manufacture products with lower HAP binder and limit production to no more than five cars with higher THC binder levels during these periods, Therefore, we are also proposing to require sources to schedule the manufacture of product with binder percentages at the lower end of the range produced (*i.e.,* below the typical average of product binder content) and the number of kiln cars with products for which the mass fraction of organic HAP in the resins, binders, and additives greater than the average must not exceed five for the year on a 12-month rolling basis, consistent with the best practices of the facility. Based on 2017 raw material and production data provided by the facility, we estimate that if the regenerative thermal oxidizer was offline for all 750 hours allowed by the permit for maintenance, the HAP emissions during that 750 hours would be about 61 pounds per year. This estimate is considered conservative because it does not take into account any HAP emission reductions that were achieved by implementing the best practices described in this paragraph for periods when the control device is offline (scheduling products with low HAP binder and limiting higher THC binder levels to five cars).

Finally, we are also proposing to add new reporting requirements for these periods. We are proposing to require reporting of the THC emissions and other information for control device maintenance and bypass periods in semi-annual compliance reports (in addition to the current NESHAP provision to document the planned maintenance procedures in the OM&M plan and to maintain records of continuous kiln maintenance). Reporting of this information in the semi-annual compliance reports will help to ensure compliance with the revised requirements that we are proposing.

As part of the technology review, we also identified previously unregulated HAP, and are proposing new standards under CAA sections 112(d)(2) and (3), as described in section IV.A, above. Additional information supporting the revised standard is provided in the memorandum titled *Technology Review for the Refractory Products Manufacturing NESHAP,* available in the docket for this action.

E. What other actions are we proposing?

In addition to the proposed actions described above, we are proposing additional revisions to the NESHAP. We are proposing revisions to the SSM provisions of the MACT rule 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 various other changes to require electronic submittal of notification of compliance status (NOCS) reports, performance test and performance evaluation reports for refractory products manufacturing facilities, new test methods and incorporation by reference (IBR) of alternative test methods, and making technical and editorial revisions. Our analyses and proposed changes related to these issues are discussed in the sections below.

1. SSM

a. Proposed Elimination of the SSM Exemption

In its 2008 decision in *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008), 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.

We are proposing the elimination of the SSM exemption in this rule, which appears at 40 CFR 63.9792(a)(1). Consistent with *Sierra Club* v. *EPA,* we are proposing standards in this rule that apply at all times. We are also proposing several revisions to Table 11 of 40 CFR part 63, subpart SSSSS (*Applicability of General Provisions to Subpart SSSSS,* hereafter referred to as the ''General Provisions table to subpart SSSSS''). For example, we are proposing to eliminate the incorporation of the General Provisions' requirement that the source develop an SSM plan. Further, we are proposing to eliminate and revise certain recordkeeping and reporting requirements related to the SSM exemption as further described below. 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 seeking comment on the specific proposed deletions and revisions and also whether additional provisions should be revised to achieve the stated goal.

In proposing these rule amendments, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, is not proposing alternate standards for those periods. Nonclay refractory sources employ the use of continuous and periodic kilns that use air pollution control devices, including thermal oxidizers, regenerative thermal oxidizers, and catalytic oxidizers, to meet the THC limit in the rule. Facility representatives for these sources indicated that startups and shutdowns of the kilns and air pollution control devices are part of normal operations and they experience no difficulties in meeting the existing THC emission limit during these periods. Therefore, alternative standards are not needed.

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). Under CAA section 112, emissions standards for new sources must be no less stringent than the level ''achieved'' by the best controlled similar source and for existing sources generally must be no less stringent than the average emission limitation ''achieved'' by the best performing 12 percent of sources in the category. There is nothing in CAA section 112 that directs the Agency to consider malfunctions in determining the level ''achieved'' by the best performing sources when setting emission standards. As the court has recognized, the phrase ''average emissions limitation achieved by the best performing 12 percent of'' sources ''says nothing about how the performance of the best units is to be calculated.'' *Nat'l Ass'n of Clean Water Agencies* v. *EPA,* 734 F.3d 1115, 1141 (D.C. Cir. 2013). While the EPA accounts for variability in setting emissions standards, nothing in CAA section 112 requires the Agency to consider malfunctions as part of that analysis. The EPA is not required to treat a malfunction in the same manner as the type of variation in performance that occurs during routine operations of a source. A malfunction is a failure of the source to perform in a ''normal or usual manner'' and no statutory language compels the EPA to consider such events in setting CAA section 112 standards.

As the court recognized in *U.S. Sugar Corp,* accounting for malfunctions in setting standards would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category and given the difficulties associated with predicting or accounting for the frequency, degree, and duration of various malfunctions that might occur. *Id.* at 608 (''the EPA would have to conceive of a standard that could apply equally to the wide range of possible boiler malfunctions, ranging from an explosion to minor mechanical defects. Any possible standard is likely to be hopelessly generic to govern such a wide array of circumstances.''). As such, the performance of units that are malfunctioning is not ''reasonably'' foreseeable. See, *e.g., Sierra Club* v. *EPA,* 167 F.3d 658, 662 (D.C. Cir. 1999) (''The EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to 'invest the resources to conduct the perfect study.' ''). See also, *Weyerhaeuser* v. *Costle,* 590 F.2d 1011, 1058 (D.C. Cir. 1978) (''In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation.''). In addition, emissions during a malfunction event can be significantly higher than emissions at any other time of source operation. For example, if an air pollution control device with 99 percent removal goes off-line as a result of a malfunction (as might happen if, for example, the bags in a baghouse catch fire) and the emission unit is a steady state type unit that would take days to shut down, the source would go from 99 percent control to zero control until the control device was repaired. The source's emissions during the malfunction would be 100 times higher than during normal operations. As such, the emissions over a 4-day malfunction period would exceed the annual emissions of the source during normal operations. As this example illustrates, accounting for malfunctions could lead to standards that are not reflective of (and significantly less stringent than) levels that are achieved by a well-performing non-malfunctioning source. It is reasonable to interpret CAA section 112 to avoid such a result. The EPA's approach to malfunctions is consistent with CAA section 112 and is a reasonable interpretation of the statute.

Although no statutory language compels the EPA to set standards for malfunctions, the EPA has the discretion to do so where feasible. For example, in the Petroleum Refinery Sector RTR, the EPA established a work practice standard for unique types of malfunctions that result in releases from pressure relief devices or emergency flaring events because we had information to determine that such work practices reflected the level of control that applies to the best performing sources (80 FR 75178, 75211 through 75214, December 1, 2015). The EPA will consider whether circumstances warrant setting standards for a particular type of malfunction and, if so, whether the EPA has sufficient information to identify the relevant best performing sources and establish a standard for such malfunctions. We also encourage commenters to provide any such information.

In the event that a source fails to comply with the applicable CAA section 112(d) standards as a result of a malfunction event, the EPA will determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA will also consider whether the source's failure to comply with the CAA section 112(d) standard was, in fact, sudden, infrequent, not reasonably preventable, and was not instead caused, in part, by poor maintenance or careless operation. 40 CFR 63.2 (Definition of malfunction).

If the EPA determines in a particular case that an enforcement action against a source for violation of an emission standard is warranted, the source can raise any and all defenses in that enforcement action and the federal district court will determine what, if any, relief is appropriate. The same is true for citizen enforcement actions. Similarly, the presiding officer in an administrative proceeding can consider any defense raised and determine whether administrative penalties are appropriate.

In summary, the EPA interpretation of the CAA and, in particular, CAA section 112, is reasonable and encourages practices that will avoid malfunctions. Administrative and judicial procedures for addressing exceedances of the standards fully recognize that violations may occur despite good faith efforts to comply and can accommodate those situations. *U.S. Sugar Corp.* v. *EPA,* 830 F.3d 579, 606–610 (2016).

b. 40 CFR 63.9792(b) General Duty

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.6(e)(1)(i) by changing the ''yes'' in column 4 to a ''no.'' Section 63.6(e)(1)(i) describes the general duty to minimize emissions. Some of the language in that section is no longer necessary or appropriate in light of the elimination of the SSM exemption. We are proposing instead to add general duty regulatory text at 40 CFR 63.9792(b) that reflects the general duty to minimize emissions while eliminating the reference to periods covered by an SSM exemption. The current language in 40 CFR 63.6(e)(1)(i) characterizes what the general duty entails during periods of SSM. With the elimination of the SSM

exemption, there is no need to differentiate between normal operations, startup and shutdown, and malfunction events in describing the general duty. Therefore, the language the EPA is proposing for 40 CFR 63.9792(b) does not include that language from 40 CFR 63.6(e)(1)(i).

We are also proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.6(e)(1)(ii) by changing the ''yes'' in column 4 to a ''no.'' Section 63.6(e)(1)(ii) imposes requirements that are not necessary with the elimination of the SSM exemption or are redundant with the general duty requirement being added at 40 CFR 63.9792(b).

c. SSM Plan

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.6(e)(3) by changing the ''yes'' in column 4 to a ''no.'' Generally, these paragraphs require development of an SSM plan and specify SSM recordkeeping and reporting requirements related to the SSM plan. We are also proposing to remove from 40 CFR part 63, subpart SSSSS, the current provisions requiring the SSM plan at 40 CFR 63.9792(c). As noted, the EPA is proposing to remove the SSM exemptions. Therefore, affected units will be subject to an emission standard during such events. The applicability of a standard during such events will ensure that sources have ample incentive to plan for and achieve compliance, and, thus, the SSM plan requirements are no longer necessary.

d. Compliance With Standards

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.6(f)(1) by changing the ''yes'' in column 4 to a ''no.'' The current language of 40 CFR 63.6(f)(1) exempts sources from non-opacity standards during periods of SSM. As discussed above, the court in *Sierra Club* vacated the exemptions contained in this provision and held that the CAA requires that some CAA section 112 standards apply continuously. Consistent with *Sierra Club,* the EPA is proposing to revise the standards in this rule to apply at all times.

e. 40 CFR 63.9800 Performance Testing

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.7(e)(1) by changing the entry in column 4 to a ''no.'' Section 63.7(e)(1) describes performance testing requirements. The EPA is instead proposing to add a performance testing requirement at 40 CFR 63.9800(d). 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 proposed performance testing provisions will also not allow performance testing during startup or shutdown. As in 40 CFR 63.7(e)(1), performance tests conducted under this subpart should not be conducted during malfunctions because conditions during malfunctions are often not representative of normal operating conditions. Section 63.7(e) requires that the owner or operator maintain records of the process information necessary to document operating conditions during the test and include in such records an explanation to support that such conditions represent normal operation. The EPA is proposing to add language clarifying that the owner or operator must make such records available to the Administrator.

f. Monitoring

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.8(c)(1) by changing the ''yes'' in column 4 to a ''no.'' The cross-references to the general duty and SSM plan requirements in 40 CFR 63.8(c)(1) 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)). Further, we are proposing to revise 40 CFR 63.9804(a)(13) and 63.9808(b) to add requirements to maintain the monitoring equipment at all times in accordance with 40 CFR 63.9792(b) and keep the parts readily available for routine repairs of the monitoring equipment, consistent with the requirements in 40 CFR 63.8(c)(1)(ii).

g. 40 CFR 63.9816 Recordkeeping

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.10(b)(2)(i) by changing the ''yes'' in column 4 to a ''no.'' Section 63.10(b)(2)(i) describes the recordkeeping requirements during startup and shutdown. These recording provisions are no longer necessary because the EPA is proposing that recordkeeping and reporting applicable to normal operations will 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 the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.10(b)(2)(ii) by changing the ''yes'' in column 4 to a ''no.'' Section 63.10(b)(2)(ii) describes the recordkeeping requirements during a malfunction, requiring a record of ''the occurrence and duration of each malfunction.'' A similar record is already required in 40 CFR 63.9816(c)(5), which requires a record of ''the date, time, and duration of each deviation,'' which the EPA is retaining. The regulatory text in 40 CFR 63.9816(c)(5) differs from the General Provisions in that the General 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; whereas 40 CFR 63.9816(c)(5) applies to any failure to meet an applicable standard and is requiring that the source record the date, time, and duration of the failure rather than the ''occurrence.'' For this reason, the EPA is proposing to add to 40 CFR 63.9816(c)(5) a requirement that sources also keep records that include a list of the affected source or equipment and actions taken to minimize emissions, an estimate of the quantity of each regulated pollutant emitted over the emission limit 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 (*e.g.,* process throughput, rate, operating temperature, organic HAP content, and control device efficiencies). 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 General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR

63.10(b)(2)(iv) and (v) by changing the ''yes'' in column 4 to a ''no.'' When applicable, the provision requires sources to record actions taken during SSM events when actions were inconsistent with their SSM plan. The requirement in 40 CFR 63.10(b)(2)(iv) is no longer appropriate because SSM plans will 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 63.9816(c)(5). When applicable, the provision in 40 CFR 63.10(b)(2)(v) 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 will no longer be required.

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.10(b)(2)(vi) by changing the ''yes'' in column 4 to a ''no.'' The provision requires sources to maintain records during continuous monitoring system (CMS) malfunctions. Section 63.9816(c)(5) covers records of periods of deviation from the standard, including instances where a CMS is inoperative or out-of-control.

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.10(c)(15) by changing the ''yes'' in column 4 to a ''no.'' When applicable, the provision allows an owner or operator to use the affected source's SSM plan or records kept 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.

We are proposing to remove the requirement in 40 CFR 63.9816(a)(2) that deviation records specify whether deviations from a standard occurred during a period of SSM. This revision is being proposed due to the proposed removal of the SSM exemption and because, as discussed above in this section, we are proposing that deviation records must specify the cause of each deviation, which could include a malfunction period as a cause. We are also proposing to remove the requirement to report the SSM records in 40 CFR 63.6(e)(3)(iii) through (v) by deleting 40 CFR 63.9816(a)(2).

h. 40 CFR 63.9814 Reporting

We are proposing to revise the General Provisions table to subpart SSSSS (Table 11) entry for 40 CFR 63.10(d)(5) by changing the ''yes'' in column 4 to a ''no.'' Section 63.10(d)(5) describes the reporting requirements for SSM. To replace the General Provisions reporting requirement, the EPA is proposing to remove the immediate SSM report from Table 10 referenced at 40 CFR 63.9814(a) and add reporting requirements to 40 CFR 63.9814(d) and (e). The replacement language differs from the General Provisions requirement in that it eliminates the SSM report 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 semi-annual compliance report already required under this rule. For deviations from an applicable emission limitation that occur at an affected source where a CPMS is not used to demonstrate compliance, 40 CFR 63.9814(d) already requires that the semi-annual compliance report must contain the number, duration, and the cause of such events (including unknown cause, if applicable). We are proposing that the report also include the date and time of each deviation, a list of the affected source or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit for which the source failed to meet the standard, and a description of the method used to estimate the emissions. Similarly, for deviations from an applicable emission limitation that occur at an affected source where a CPMS is used to demonstrate compliance, we are retaining the current requirements in 40 CFR 63.9814(e) to report the date, time, and cause of each deviation. We are proposing that the report must also contain the number and duration of deviations, a list of the affected sources 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.

Regarding the proposed new requirement discussed above to estimate the quantity of each regulated pollutant emitted over any emission limit 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 (*e.g.,* process throughput, rate, operating temperature, organic HAP content, and control device efficiencies). The EPA is proposing this requirement to ensure that the EPA has 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 will 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 requirement in Table 10 to 40 CFR part 63, subpart SSSSS to report whether the source deviated from its SSM plan, including required actions to communicate with the Administrator, and the cross-reference to 40 CFR 63.10(d)(5)(ii) 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 will be reported in otherwise required reports with similar format and submittal requirements.

Section 63.10(d)(5)(ii) describes an immediate report for SSM when a source failed to meet an applicable standard but did not follow the SSM plan. We will no longer require owners and operators to report when actions taken during an SSM event were not consistent with an SSM plan, because plans would no longer be required.

We are proposing to remove the requirement in 40 CFR 63.9814(e)(5) that deviation reports must specify whether deviation from an operating limit occurred during a period of SSM. We are also proposing to remove the requirements in 40 CFR 63.9814(e)(8) to break down the total duration of deviations into the startup and shutdown categories. As discussed above in this section, we are proposing to require reporting of the cause of each deviation. Further, the startup and shutdown categories no longer apply because these periods are proposed to be considered normal operation.

2. Electronic Reporting Requirements

The EPA is proposing that owners and operators of refractory products manufacturing facilities submit electronic copies of NOCS required by 40 CFR 63.7(b) and (c), 40 CFR 63.8(f)(4), and 40 CFR 63.9 (b) through (e) and (h), and 40 CFR 63.9812, and performance test results and performance evaluation results required

by 40 CFR 63.9(h) and 40 CFR 63.9800, and 40 CFR 63.9814 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 proposal requires that all NOCS be submitted as portable document format (PDF) files and uploaded to CEDRI. For performance test and performance evaluation results the proposal requires test results that use test methods supported by the EPA's Electronic Reporting Tool (ERT) listed on the ERT website [25] 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. Performance test results using test methods that are not supported by the ERT at the time of the test are required to submitted as a PDF file using the attachment module of the ERT.

Additionally, the EPA has identified two broad circumstances in which electronic reporting extensions may be provided. These circumstances are (1) outages of the EPA's CDX or CEDRI that preclude an owner or operator from accessing the system and submitting required reports and (2) *force majeure* events, which are defined as events that will be or have been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevent an owner or operator from complying with the requirement to submit a report electronically. Examples of *force majeure* events are acts of nature, acts of war or terrorism, or equipment failure or safety hazards beyond the control of the facility. The EPA is providing these potential extensions to protect owners and operators from noncompliance in cases where they cannot successfully submit a report by the reporting deadline for reasons outside of their control. In both circumstances, the decision to accept the claim of needing additional time to report is within the discretion of the Administrator, and reporting should occur as soon as possible.

The electronic submittal of the reports addressed in this proposed rulemaking will increase the usefulness of the data contained in those reports, is in keeping with current trends in data availability and transparency, will further assist in the protection of public health and the environment, will 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 will 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 [26] to implement Executive Order 13563 and is in keeping with the EPA's Agency-wide policy [27] developed in response to the White House's Digital Government Strategy.[28] For more information on the benefits of electronic reporting, see the memorandum, *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules,* referenced earlier in this section.

3. Incorporation by Reference Under 1 CFR Part 51

The EPA is proposing regulatory text that includes IBR. In accordance with requirements of 1 CFR 51.5, the EPA is proposing to incorporate by reference the following documents described in the amendments to 40 CFR 63.14:

- ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus],'' issued August 31, 1981, IBR proposed for Table 4 to 40 CFR part 63, subpart SSSSS. This document specifies methods, apparatus, and calculations which are used to determine quantitatively, the gaseous constituents of the exhausts including oxygen and carbon dioxide resulting from station combustions sources.
- ASTM D6348–12e1, ''Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy,'' Approved February 1, 2012, IBR proposed for Table 4 to 40 CFR part 63, subpart SSSSS.
- ASTM D6784–16, ''Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method),'' (Approved March 1, 2016), IBR proposed for Table 4 to 40 CFR part 63, subpart SSSSS.
- EPA–454/R–98–015, Office of Air Quality Planning and Standards (OAQPS), ''Fabric Filter Bag Leak Detection Guidance,'' September 1997, IBR proposed for 40 CFR 63.9804(f). This document provides guidance on the use of triboelectric monitors as fabric filter bag leak detectors. The document includes fabric filter and monitoring system descriptions; guidance on monitor selection, installation, setup, adjustment, and operation; and quality assurance procedures.

The EPA has made, and will continue to make, the EPA document generally available electronically through *https://www.regulations.gov/* and/or in hard copy at the appropriate EPA office (see the **ADDRESSES** section of this preamble for more information). The ANSI/ASME document is available from the American Society of Mechanical Engineers (ASME) at *http://www.asme.org;* by mail at Three Park Avenue, New York, NY 10016–5990; or by telephone at (800) 843–2763. The ASTM methods are available from ASTM International at *http://www.astm.org;* by mail at 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428–2959; or by telephone at (610) 832–9585.

4. Technical and Editorial Changes

The following lists additional proposed changes that address technical and editorial corrections:

- Revise 40 CFR 63.9824 and Table 4 to subpart SSSSS of part 63 to clarify the location in 40 CFR part 60 of applicable EPA test methods; and
- Revise 40 CFR 63.9814 and 40 CFR 63.9816 to include the requirements to record and report information on failures to meet the applicable standard.

F. What compliance dates are we proposing?

We are proposing that affected sources that commence construction or reconstruction after January 14, 2021, must comply with all requirements of

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

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

[27] 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.*

[28] 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.*

the subpart, including the amendments being proposed, no later than the effective date of the final rule or upon startup, whichever is later. The final action is not expected to be a ''major rule'' as defined by 5 U.S.C. 804(2), so the effective date of the final rule will be the promulgation date as specified in CAA section 112(d)(10).

We are proposing that affected sources that commence construction or reconstruction on or before January 14, 2021, must comply with the all requirements of the subpart, including the amendments being proposed, no later than the dates described below. We are also proposing that existing nonclay affected sources must comply with the requirement to use natural gas as fuel, or an equivalent fuel, as the kiln fuel (except during periods of natural gas curtailment or supply interruption) immediately upon the effective date of the final rule.

Also, we are proposing that existing affected sources must comply with the following two amendments no later than 181 days after the effective date of the final rule (*i.e.,* 181 days after the date of publication of the final rule in the **Federal Register**). First, for existing affected sources, we are proposing a requirement that notifications, performance test results, and performance evaluation results be electronically submitted. Second, for existing affected sources with continuous kilns using THC emission control devices, we are proposing improvements to the existing work practice standard as a result of the CAA section 112(d)(6) technology review *i.e.,* limit the number of hours for bypass of the control device to conduct scheduled maintenance to 750 hours per year per kiln, schedule the manufacture of product with binder percentages at the lower end of the range during periods of control device bypass, and report THC emissions in the semi-annual compliance report. Existing affected facilities would have to continue to meet the current requirements of 40 CFR part 63, subpart SSSSS, until the applicable compliance date of the amended rule (*i.e.,* 181 days after the date of publication of the final rule in the **Federal Register**).

Finally, we are proposing that affected clay refractory product sources that commenced construction or reconstruction on or before January 14, 2021 must meet new limits for PM/metal HAP and mercury no later than 1 year after the effective date of the final rule. The EPA determined that a 1-year compliance date allows sufficient time for notification and testing to demonstrate initial compliance with the new PM/metal HAP and mercury limits.

We are proposing the immediate compliance date for the removal of the SSM exemptions in 40 CFR 63.6(f)(1) in accordance with the SSM court decision. For other SSM changes, excluding the revised requirements for the SSM described above (40 CFR 63.6(f)(1)), our experience with similar industries further shows that this sort of regulated facility generally requires a time period of 181 days to read and understand the amended rule requirements; make any necessary adjustments; to read and understand the rule and adjust computer systems, evaluate whether changes are needed, and to update their OM&M plan to reflect the revised requirements.

We also determined that an immediate compliance date is practicable for the natural gas requirement and is based on current practices and other information provided by the facilities.

We are proposing the 181-day compliance date for electronic reporting and the scheduled maintenance work practice to require facilities to implement these changes as expeditiously as practicable. For electronic reporting, our experience with similar industries that are required to convert reporting mechanisms to install necessary hardware and software, become familiar with the process of submitting performance test results electronically through the EPA's CEDRI, test these new electronic submission capabilities, and reliably employ electronic reporting shows that a time period of a minimum of 90 days, and, more typically, 180 days, is generally necessary to successfully accomplish these revisions. For the scheduled maintenance work practice, we expect facilities would also need this time to seek approval from the Administrator before taking the control device on the affected kiln out of service for scheduled maintenance and update their operation, maintenance, and monitoring plan to reflect the revised requirements.

For the new PM/metal HAP and mercury requirements, we determined the 1-year compliance date would provide existing clay sources with sufficient time to plan and schedule facility resources to meet the notification and compliance demonstration testing requirements associated with the new limits.

We solicit comment on these proposed compliance periods, and we specifically request submission of information from sources in this source category regarding specific actions that would need to be undertaken to comply with the proposed amended requirements and the time needed to make the adjustments for compliance with any of the revised requirements. We note that information provided may result in changes to the proposed compliance dates.

V. Summary of Cost, Environmental, and Economic Impacts

A. What are the affected sources?

Currently, three major sources subject to the Refractory Products Manufacturing NESHAP are operating in the United States. The NESHAP applies to each new, reconstructed, and existing affected source located at a refractory products manufacturing facility that is a major source of HAP emissions, is located at a major source of HAP emissions, or is part of a major source of HAP emissions. A refractory products manufacturing facility is a plant site that manufactures refractory products, such as refractory bricks, refractory shapes, monolithics, kiln furniture, crucibles, and other materials used for lining furnaces and other high temperature process units. Refractory products manufacturing facilities typically process raw material by crushing, grinding, and screening; mixing the processed raw materials with binders and other additives; forming the refractory mix into shapes; and drying and firing the shapes. The NESHAP lists the affected sources for four subcategories across the industry as the shape dryers, curing ovens, and kilns that are used to manufacture refractory products that use organic HAP; shape preheaters, pitch working tanks, defumers, and coking ovens that are used to produce pitch-impregnated refractory products; kilns that are used to manufacture chromium refractory products; and kilns that are used to manufacture clay refractory products. The three major sources currently operating in the U.S. can be grouped into two of the subcategories and use curing ovens and kilns that are used to manufacture nonclay refractory products that use organic HAP and kilns that are used to manufacture clay refractory products.

B. What are the air quality impacts?

At the current level of control, the estimated emissions of HAP from the Refractory Products Manufacturing source category are approximately 40 tpy. The proposed amendments require that all three major sources in the Refractory Products Manufacturing source category comply with the relevant emission standards at all times,

including periods of SSM. The proposed amendments also limit the number of hours a continuous kiln control device can be bypassed during scheduled maintenance and require minimizing emissions of THC during bypass periods. We were unable to quantify the emissions that occur during periods of SSM or the specific emissions reductions that would occur as a result of this action. However, eliminating the SSM exemption has the potential to reduce emissions by requiring facilities to meet the applicable standard during SSM periods. Requiring the use of natural gas as kiln fuel also ensures a reduction in metal HAP emissions from combustion of coal, fuel oil, or waste-derived fuels.

Indirect or secondary air emissions impacts are impacts that would result from the increased electricity usage associated with the operation of control devices (*e.g.,* increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity and steam needed to operate control devices and other equipment. The proposed amendments would have no effect on the energy needs of the affected facilities in either of the two source categories and would, therefore, have no indirect or secondary air emissions impacts.

C. What are the cost impacts?

We estimate that each facility in this source category will experience costs as a result of these proposed amendments. Estimates for reporting and recordkeeping costs for each facility are associated with the electronic reporting requirements, elimination of the SSM exemption, and scheduled maintenance of continuous kiln control devices. The costs associated with the electronic reporting requirements are attributed to submittal of notifications and semi-annual compliance reports using CEDRI and include time for becoming familiar with CEDRI. The costs associated with the revised SSM requirements were estimated for re-evaluating previously developed SSM record systems. The costs associated with recordkeeping to document the frequency and duration of scheduled maintenance of control devices for continuous kilns were also estimated. The recordkeeping and reporting costs are presented in section VIII.C of this preamble.

We also estimated the costs associated with the proposed new compliance testing requirements for the clay refractory sources in this action. Two of the major source refractories manufacture clay refractory and are required to conduct periodic compliance testing for PM/metal HAP and mercury once every 5 years. One clay refractory source has two continuous kilns and the other has two continuous kilns and three batch kilns. The costs associated with conducting the combined PM/metal HAP and mercury test for each continuous kiln stack is estimated to be about $23,600. The costs associated with conducting the combined PM/metal HAP and mercury test for each batch kiln stack is estimated to be about $31,800. We also assumed that tests for additional stacks at the same facility would be conducted in the same trip, so the additional cost is less due to reduced travel costs. The total costs for the two facilities to test the seven kilns in a single year would be $115,300. In addition to the testing costs, each facility performing the testing will have an additional $6,800 in reporting costs per facility in the year in which the test occurs.

For kilns that meet the limits without any controls, owners or operators are required to conduct VE monitoring to demonstrate compliance. One of the continuous kilns is controlled with a wet scrubber, but the other six kilns are expected to need to conduct VE monitoring. We estimate that the monitoring will cost $3,740 per year per stack, for a total of $22,400 per year.

For further information on the potential testing and monitoring costs, see the memorandum titled *Development of Proposed Standards and Impacts for the Refractory Products Manufacturing NESHAP,* located in the docket for this action.

D. What are the economic impacts?

The economic impact analysis is designed to inform decision makers about the potential economic consequences of the compliance costs outlined in section V.C of this preamble. To assess the maximum potential impact, the largest cost expected to be experienced in any one year is compared to the total sales for the ultimate owner of the affected facilities to estimate the total burden for each owner. For these proposed amendments, the total cost of testing, monitoring, and recordkeeping and reporting is estimated to be $158,140. The total annual costs associated with the requirements range from 0.00008 to 0.18 percent of annual sales revenue per ultimate owner. These costs are not expected to result in a significant market impact, regardless of whether they are passed on to customers or absorbed by the firms.

The EPA also prepared a small business screening assessment to determine whether any of the identified affected facilities are small entities, as defined by the U.S. Small Business Administration. One of the facilities affected by these amendments is a small entity. However, the annual cost associated with the requirements is 0.18 percent of annual sales revenue for the owner of that facility. Therefore, there are no significant economic impacts on a substantial number of small entities from these amendments.

E. What are the benefits?

As stated above in section V.C of this preamble, we were unable to quantify the specific emissions reductions associated with eliminating the SSM exemption, although this proposed change has the potential to reduce emissions of volatile organic HAP.

Because these proposed amendments are not considered economically significant, as defined by Executive Order 12866, we did not monetize the benefits of reducing these emissions. This does not mean that there are no benefits associated with the potential reduction in volatile organic HAP from this rule.

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 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.

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 project website at *https://www.epa.gov/stationary-sources-air-pollution/refractory-products-manufacturing-national-emissions-standards.* The data files include detailed information for each HAP emissions release point for the facilities in the source category.

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 project 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 No. EPA–HQ–OAR–2020–0148 (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 project website at *https://www.epa.gov/stationary-sources-air-pollution/refractory-products-manufacturing-national-emissions-standards* .

VIII. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was, therefore, not submitted to OMB for review.

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is not expected to be an Executive Order 13771 regulatory action because this action is not significant under Executive Order 12866.

C. Paperwork Reduction Act (PRA)

The information collection activities in this proposal have been submitted for approval to OMB under the PRA. The ICR document that the EPA prepared has been assigned EPA ICR number 2040.08. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

As part of the RTR for the Refractory Products Manufacturing NESHAP, the EPA is not proposing to revise the existing emission limit requirements but is adding new emission limit requirements for existing clay refractory sources and is adding new work practices for existing nonclay refractory sources. The EPA is also proposing to revise the SSM provisions of the rule and proposing the use of electronic data reporting for future performance test data submittals, notifications, and reports. This information is being collected to assure compliance with 40 CFR part 63, subpart SSSSS.

Respondents/affected entities: Facilities manufacturing refractory products.

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

Estimated number of respondents: In the 3 years after the amendments are final, approximately three respondents per year would be subject to the NESHAP and no additional respondents are expected to become subject to the NESHAP during that period.

Frequency of response: The total number of responses is 21 per year.

Total estimated burden: The average annual burden to the three refractory products manufacturing facilities over the 3 years if the amendments are finalized is estimated to be 230 hours (per year). The average annual burden to the Agency over the 3 years after the amendments are final is estimated to be 202 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: The average annual cost to the refractory products manufacturing facilities is $27,100 in labor costs in the first 3 years after the amendments are final. The average annual capital and operation and maintenance cost is $69,900. The total average annual Agency cost over the first 3 years after the amendments are final is estimated to be $9,990.

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. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs via email to *OIRA_submission@omb.eop.gov,* Attention: Desk Officer for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after receipt, OMB must receive comments no later than February 16, 2021. The EPA will respond to any ICR-related comments in the final rule.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The annualized costs associated with the proposed requirements in this action for the affected small entities is described in section V.D. above.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain an 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. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

F. 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.

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

This action does not have tribal implications as specified in Executive Order 13175. No tribal facilities are known to be engaged in any of the industries that would be affected by this action. In addition, the EPA conducted a proximity analysis for this source category and found that no refractory products manufacturing facilities are located within 50 miles of tribal lands. Thus, Executive Order 13175 does not apply to this action.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in sections

III.A, IV.B, and IV.C of this preamble and are further documented in the Refractory Products Manufacturing Docket.

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

This action is not subject to Executive Order 13211 because it is not a significant regulatory action under Executive Order 12866.

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

This action involves technical standards. Therefore, the EPA conducted searches for the Refractory Products Manufacturing RTR through the Enhanced National Standards Systems Network Database managed by the American National Standards Institute (ANSI). We also contacted voluntary consensus standards (VCS) organizations and accessed and searched their databases. We conducted searches for EPA Methods 1, 1A, 2, 2A, 2C, 2D, 2F, 2G, 3, 3A, 3B, 4, 5, 25, 25A, 26, 26A, and 29 of 40 CFR part 60, and EPA Methods 311 and 320 of 40 CFR part 63, appendix A. No applicable VCS were identified for EPA Methods 1A, 2A, 2D, 2F, 2G, 5A, 5B, 5D, and 5F.

The EPA is incorporating by reference the VCS ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses.'' This method determines quantitatively the gaseous constituents of exhausts resulting from stationary combustion sources. 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. The gases covered in ANSI/ASME PTC 19.10–1981 are oxygen, carbon dioxide, CO, nitrogen, SO_2, sulfur trioxide, nitric oxide, nitrogen dioxide, hydrogen sulfide, and hydrocarbons, however the use in this rule is only applicable to oxygen and carbon dioxide and is an acceptable alternative to the manual portion only and not the instrumental portion.

The EPA is incorporating 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. ASTM D6348–03(2010) was determined to be 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 the direct measurement of a certified spike gas cylinder, but lacks the caveats placed on the ASTM D6348–03(2010) version. The VCS ASTM D6348–12e1, ''Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy,'' is an extractive FTIR field test method used to quantify gas phase concentrations of multiple analytes from stationary source effluent and 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:

(1) The test plan preparation and implementation in the Annexes to ASTM D6348–03, Sections A1 through A8 are mandatory; and

(2) In ASTM D6348–03, 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, percent R must be 70 percent $\geq R \leq 130$ percent. 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 percent R value for each compound must be reported in the test report, and all field measurements must be corrected with the calculated percent R value for that compound by using the following equation:

Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

Finally, the EPA is incorporating by reference the VCS ASTM D6784–16), ''Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method),'' as an acceptable alternative to EPA Method 29 (portion for mercury only) as a method for measuring elemental, oxidized, particle-bound, and total mercury concentrations ranging from approximately 0.5 to 100 micrograms per normal cubic meter. This test method describes equipment and procedures for obtaining samples from effluent ducts and stacks, equipment and procedures for laboratory analysis, and procedures for calculating results. VCS ASTM D6784–16 allows for additional flexibility in the sampling and analytical procedures for the earlier version of the same standard VCS ASTM D6784–02 (Reapproved 2008).

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

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

The documentation for this decision is contained in section IV.B of this preamble and the technical report titled *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Refractory Products Manufacturing Source Category Operations,* September 2020, available in the Refractory Products Manufacturing Docket, respectively.

As discussed in section IV.B of this preamble, we performed a demographic analysis for each source category, which is an assessment of risks to individual demographic groups, of the population close to the facilities (within 50 km and within 5 km). In this analysis, we evaluated the distribution of HAP-related cancer risks and noncancer hazards from the Refractory Products Manufacturing source category across different social, demographic, and economic groups within the populations living near operations identified as having the highest risks.

The results of the Refractory Products Manufacturing source category demographic analysis indicate that no one is exposed to a cancer risk at or above 1-in-1 million and no one is exposed to a chronic noncancer HI greater than 1.

The proximity results (irrespective of risk) indicate that the population percentages for ''ages 18 to 64'' and ''ages 65 and up'' demographic categories located within 5 km of refractory products manufacturing facilities and ''ages 65 and up'' demographic categories located within 50 km of refractory products manufacturing facilities are slightly higher than their respective nationwide percentages.

We do not expect this proposal to achieve significant reductions in HAP emissions. The EPA anticipates that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not significantly affect the level of protection provided to human health or the environment. The documentation

for this decision is contained in section IV of this preamble and the technical report titled *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Refractory Products Manufacturing Source Category Operations,* September 2020, which are available in the Refractory Products Manufacturing Docket, respectively.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Andrew Wheeler,

Administrator.

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