distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175, because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, and will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

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

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in section 2–202 of the Executive order. This action is not subject to Executive Order 13045 because it does not impose additional requirements beyond those imposed by state law.

I. Executive Order 13211: Actions 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)

Section 12(d) of the NTTAA directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. The EPA believes that this action is not subject to the requirements of section 12(d) of the NTTAA because application of those requirements would be inconsistent with the CAA.

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

The EPA lacks the discretionary authority to address environmental justice in this rulemaking.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Particulate matter, Reporting and recordkeeping requirements.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: December 23, 2020.

John Busterud,

Regional Administrator, Region IX.

[FR Doc. 2020–29092 Filed 1–7–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2020–0560; FRL–10018–95–OAR]

RIN 2060–AU59

National Emission Standards for Hazardous Air Pollutants: Mercury Cell Chlor-Alkali Plants Residual Risk and Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is proposing the results of the residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for mercury emissions from Mercury Cell Chlor-Alkali Plants, as required by the Clean Air Act (CAA). The EPA is proposing to find risks due to emissions of hazardous air pollutants (HAP) to be acceptable from the Mercury Cell Chlor-Alkali Plants source category, and to determine that the current NESHAP provides an ample margin of safety to protect public health and that no more stringent standards are necessary to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect. The EPA is proposing to amend the requirements for cell room fugitive mercury emissions to require work practice standards for the cell rooms and to require instrumental monitoring of cell room fugitive mercury emissions under the technology review. Furthermore, under our technology review and maximum achievable control technology (MACT) analysis, we are proposing to not require conversion to non-mercury production technology and invite comments and data and information regarding this proposed determination. In addition, the EPA is proposing standards for fugitive chlorine emissions from mercury cell chlor-alkali plants, which are not currently regulated under the NESHAP. The EPA is proposing to address applicability for thermal mercury recovery units when chlorine and caustic are no longer produced in mercury cells. The EPA is also proposing revisions related to emissions during periods of startup, shutdown, and malfunction (SSM); provisions for electronic submission of performance test results, performance evaluation reports, and Notification of Compliance Status (NOCS) reports; and correction of various compliance errors in the current rule.

DATES:

Comments. Comments must be received on or before February 22, 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 8, 2021.

Public hearing: If anyone contacts us requesting a public hearing on or before January 13, 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–2020–0560, 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–2020–0560 in the subject line of the message.
- *Fax:* (202) 566–9744. Attention Docket ID No. EPA–HQ–OAR–2020–0560.
- *Mail:* U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA–HQ–OAR–2020–0560, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- *Hand Delivery or Courier (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 Phil Mulrine, Sector Policies and Programs Division (D243–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–5289; fax number: (919) 541–4991; and email address: *mulrine.phil@epa.gov.* For specific information regarding the risk modeling methodology, contact James Hirtz, 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) 541–0881; fax number: (919) 541–0840; and email address: *hirtz.james@epa.gov.*

SUPPLEMENTARY INFORMATION:

Participation in virtual public hearing. Please note that the EPA is deviating from its typical approach 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 (888) 372–8699 or by email at *SPPDpublichearing@epa.gov.* If requested, the virtual hearing will be held on January 25, 2021. The hearing will convene at 9:00 a.m. Eastern Time (ET) and will conclude at 3:00 p.m. ET. The EPA may close a session 15 minutes after the last pre-registered speaker has testified if there are no additional speakers. The EPA will announce further details on the virtual public hearing at *https://www.epa.gov//stationary-sources-air-pollution/mercury-cell-chloralkali-plants-national-emissions-standards.*

The EPA will begin pre-registering speakers for the hearing upon publication of this document in the **Federal Register**, if a 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/mercury-cell-chloralkali-plants-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 21, 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/mercury-cell-chloralkali-plants-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 Phil Mulrine at *mulrine.phil@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 is posted online at *https://www.epa.gov/stationary-sources-air-pollution/mercury-cell-chloralkali-plants-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 15, 2021. The EPA may not be able to arrange accommodations without advanced notice.

Docket. The EPA has established a docket for this rulemaking under Docket ID No. EPA–HQ–OAR–2020–0560. In addition to this docket established for this rulemaking, relevant information can be found in dockets for previous rulemakings; EPA–HQ–OAR–2002–0016 and EPA HQ–OAR–2002–0017. 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–2020–0560. 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–2020–0560. 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 two
AERMOD air dispersion model used by the HEM–3 model
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 EPA's Enforcement and Compliance History Online database
EPA Environmental Protection Agency
ERPG emergency response planning guidelines
ERT Electronic Reporting Tool
GACT generally available control technology
HAP hazardous air pollutant(s)
HCl hydrochloric acid
HEM–3 Human Exposure Model, Version 1.5.5
HF hydrogen fluoride
HI hazard index
HQ hazard quotient
ICR Information Collection Request
IRIS EPA's Integrated Risk Information System
km kilometer
MACT maximum achievable control technology
MIR maximum individual risk
NAAQS National Ambient Air Quality Standards
NAICS North American Industry Classification System
NEI National Emissions Inventory
NESHAP national emission standards for hazardous air pollutants
NOAEL No Observed Adverse Effect Level
NOCS Notification of Compliance Status report
NRDC Natural Resources Defense Council
NSPS new source performance standards
OMB Office of Management and Budget
OSHA Occupational Safety and Health Administration
PB–HAP hazardous air pollutants known to be persistent and bio-accumulative in the environment
PDF portable document format
PM particulate matter
POM polycyclic organic matter
ppm parts per million
PRA Paperwork Reduction Act
REL reference exposure level
RfC reference concentration
RTR residual risk and technology review
SAB Science Advisory Board
SSM startup, shutdown, and malfunction
SV screening value
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
URE unit risk estimate
USGS U.S. Geological Survey

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

I. General Information

A. Does this action apply to me?

The source category that is the subject of this proposal is Mercury Cell Chlor-Alkali Plants regulated under 40 CFR part 63, subpart IIIII. The North American Industry Classification System (NAICS) code for the chlor-alkali industry is 325180. 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.

In the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (see 57 FR 31576, July 16, 1992) and *Documentation for Developing the Initial Source Category List, Final Report* (*see* EPA–450/3–91–030, July 1992), the EPA listed the Chlorine Production source category. Subsequently, on December 19, 2003, the EPA divided the Chlorine Production source category into two subcategories because of the differences in the production methods and the HAP emitted. These subcategories are: (1) Mercury cell chlor-alkali plants; and (2) chlorine production plants that do not rely upon mercury cells for chlorine production (*e.g.,* diaphragm cell chlor-alkali plants, membrane cell chlor-alkali plants, etc.). The EPA issued separate final actions in December 2003 to address emissions of mercury from the mercury cell chlor-alkali plant subcategory sources (68 FR 70904) and deleted the non-mercury cell subcategory (68 FR 70948). This action addresses the Mercury Cell Chlor-Alkali Plant source category, where a mercury cell chlor-alkali plant is any facility where mercury cells are used to manufacture product chlorine, product caustic, and by-product hydrogen and where mercury may be recovered from wastes.

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/mercury-cell-chloralkali-plants-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 this same website. Information on the overall RTR program is available at *https://www3.epa.gov/ttn/atw/rrisk/rtrpg.html.*

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 IIIII,* available in the docket for this action (Docket ID No. EPA–HQ–OAR–2020–0560). 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/mercury-cell-chloralkali-plants-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.*). 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 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 reqruirements. A more comprehensive discussion appears in the document titled *CAA Section 112 Risk and Technology Reviews: Statutory Authority and Methodology,* in the docket for this rulemaking.

In the first stage of the CAA section 112 standard setting process, the EPA promulgates technology-based standards under CAA section 112(d) for categories of sources identified as emitting one or more of the HAP listed in CAA section 112(b). Sources of HAP emissions are either major sources or area sources, and CAA section 112 establishes different requirements for major source standards and area source standards. ''Major sources'' are defined in CAA section 112(a)(1) as 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 (not including motor vehicles or nonroad vehicles) are ''area sources,'' as defined in CAA section 112(a)(2). 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 upheld the EPA's interpretation that CAA section 112(f)(2) incorporates the approach established in the Benzene NESHAP. See *NRDC* v. *EPA,* 529 F.3d 1077, 1083 (D.C. Cir. 2008).

The approach incorporated into the CAA and used by the EPA to evaluate residual risk and to develop standards under CAA section 112(f)(2) is a two-step approach. In the first step, the EPA determines whether risks are acceptable. This determination ''considers all health information, including risk estimation uncertainty, and includes a presumptive limit on maximum individual lifetime [cancer] risk (MIR) [1] of approximately 1-in-10 thousand.'' (54 FR 38045). If risks are unacceptable, the EPA must determine the emissions standards necessary to reduce risk to an acceptable level without considering costs. In the second step of the approach, the EPA considers whether the emissions standards provide an ample margin of safety to protect public health ''in consideration of all health information, including the number of persons at risk levels higher than approximately 1 in 1 million, as well as other relevant factors, including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision.'' *Id.* The EPA must promulgate emission standards necessary to provide an ample margin of safety to protect public health or determine that the standards being reviewed provide an ample margin of safety without any revisions. After conducting the ample margin of safety analysis, we consider whether a more stringent standard is necessary to prevent, taking into consideration costs, energy, safety, and other relevant factors, an ''adverse environmental effect'' as defined in CAA section 112(a)(7).

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 (D.C. Cir. 2008). *Association of Battery Recyclers, Inc.* v. *EPA,* 716 F.3d 667 (D.C. Cir. 2013). The EPA may consider cost in deciding whether to revise the standards pursuant to CAA section 112(d)(6). The EPA is required to address regulatory gaps, such as missing standards for listed HAP known to be emitted from the source category. *Louisiana Environmental Action Network (LEAN)* v. *EPA,* 955 F.3d 1088 (D.C. Cir. 2020).

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

The Chlorine Production source category was initially listed as a category of major sources of HAP pursuant to section 112(c)(1) of the CAA on July 16, 1992 (57 FR 31576). At the time of the initial listing, the EPA defined the Chlorine Production source category as follows:

> The Chlorine Production Source Category includes any facility engaged in the production of chlorine. The category includes, but is not limited to, facilities producing chlorine by the following production methods: Diaphragm cell, mercury cell, membrane cell, hybrid fuel cell, Downs cell, potash manufacture, hydrochloric acid decomposition, nitrosyl chloride process, nitric acid/salt process, Kel-Chlor process, and sodium chloride/sulfuric acid process.[2]

Based on the differences in the production methods and the HAP emitted, the EPA decided to divide the Chlorine Production source category into two subcategories: (1) Mercury cell chlor-alkali plants; and (2) chlorine production plants that do not rely upon mercury cells for chlorine production (diaphragm cell chlor-alkali plants, membrane cell chlor-alkali plants, etc.). On July 3, 2002, the EPA issued separate proposals to address emissions of mercury from the mercury cell chlor-alkali plant subcategory sources (67 FR 44672) and emissions of chlorine and hydrochloric acid (HCl) from both subcategories (67 FR 44713). Separate final actions were taken on both proposals on December 19, 2003. As part of these separate final actions, the EPA deleted the non-mercury cell subcategory under the authority of CAA section 112(c)(9)(B)(ii) of the CAA (68 FR 70948).

The final rule for the Mercury Cell Chlor-Alkali Plants subcategory (68 FR 70904, December 19, 2003, codified at 40 CFR part 63 subpart IIIII), which covers both major and area sources, included standards for mercury emissions from two types of affected sources at plant sites where chlorine and caustic are produced in mercury cells: Mercury cell chlor-alkali production facilty affected sources and mercury recovery facility affected sources. The rule prohibits mercury emissions from new and reconstructed mercury cell chlor-alkali production facilities. 40 CFR 63.8190(a)(1). For existing mercury cell chlor-alkali production facilities, the standards include emission limitations for mercury emissions from process vents (including emissions from end-box ventilation systems and hydrogen systems) and work practices for fugitive mercury emissions from the cell room. 40 CFR 8190(a)(2), 8192(a) through (f). For new, reconstructed, and existing mercury recovery facilities, the NESHAP includes emission limitations for mercury emissions from oven type thermal recovery unit vents and non-oven type thermal recovery unit vents. 40 CFR 63.8190(a)(3). The rule did not include standards for chlorine or HCl, citing the authority of section 112(d)(4) of the CAA (68 FR 70906). In its 2003 action (68 FR 70904), the EPA promulgated the initial Mercury Cell Chlor-Alkali Plants NESHAP pursuant to CAA section 112(d)(2) and added the source category to the EPA's Source Category List under CAA sections 112(c)(1), as well as under (c)(3) and (k)(3)(B) and (c)(6), in each case because of the mercury emissions.

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

[2] Documentation for Developing the Initial Source Category List. U.S. Environmental Protection Agency. EPA–450/3–91–030. July 1992. p. A–67. Available at: *https://www3.epa.gov/ttn/atw/socatlst/socatpg.html.*

Following promulgation of the 2003 Mercury Cell Chlor-Alkali Plants NESHAP, the EPA received a petition to reconsider several aspects of the rule from the Natural Resources Defense Council (NRDC). NRDC also filed a petition for judicial review of the rule in the U.S. Court of Appeals for the District of Columbia Circuit. In a letter dated April 8, 2004, the EPA granted NRDC's petition for reconsideration and on July 20, 2004, the court placed the petition for judicial review in abeyance pending the EPA's action on reconsideration. The EPA issued proposals on June 11, 2008 (73 FR 33258), and on March 14, 2011 (76 FR 13852), to respond to the reconsideration petition. We discuss the reconsideration and the 2008 and 2011 proposals further in section IV.A.2 of this preamble.

The use of mercury cell technology has been declining for decades due to conversions to non-mercury processes and closures. For example, in 1993, there were about 13 facilities in the U.S., and when we initiated the development of this RTR proposed rule in early 2020, there were two facilities operating. Since that time, one facility (Ashta Chemicals in Ohio) ceased operating the mercury cell process.[3] So, now only one mercury cell chlor-alkali plant remains in operation. The one remaining mercury cell chlor-alkali facility is owned by Westlake Chemical (operated by Eagle Natrium, LLC) and is located in Marshall County, West Virginia. This is a large integrated chemical production facility whose products include chlorine and caustic from their chlor-alkali processes. In addition to the mercury cell process, chlorine and caustic are also produced in diagraghm cells at the site.

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

Data sources used for this effort include the 2017 National Emissions Inventory (NEI), title V permit information, conversations with the West Virginia Department of Environmental Protection, and conversations with facility representatives. The NEI data were examined, and the processes and related emission sources associated with the mercury cell chlor-alkali plant were identified. In addition, information from data collection efforts from previous regulatory efforts for the source category were consulted, including studies that were conducted for the 2002 proposals, the 2003 final actions, and the 2008 and 2011 proposals cited above.

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

There are other sources that are often used by the EPA in obtaining information for RTRs. Examples include the EPA's Enforcement and Compliance History Online (ECHO) database, the Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate Clearinghouse, and NESHAP for similar industries. However, these sources were not utilized for the review for the Mercury Cell Chlor-Alkali Plants NESHAP because (1) the mercury cell processes are primarily sources of fugitive emissions and are unique such that control measures and work practices from other industries would not be applicable, and (2) since there is only one operating facility, it was more practical to focus on the specifics of that single facility.

III. Analytical Procedures and Decision-Making

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

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

As discussed in section II.A of this preamble and in the Benzene NESHAP, in evaluating and developing standards under CAA section 112(f)(2), we apply a two-step approach to determine whether or not risks are acceptable and to determine if the standards provide an ample margin of safety to protect public health. As explained in the Benzene NESHAP, ''the first step judgment on acceptability cannot be reduced to any single factor'' and, thus, ''[t]he Administrator believes that the acceptability of risk under section 112 is best judged on the basis of a broad set of health risk measures and information.'' (54 FR at 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.[4] 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 the 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 non-cancer 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,

[3] Ashta Chemicals in Ashtabula, Ohio, has stopped operating the mercury cell process, and is on schedule to complete the conversion to membrane cells by end of 2020. Source: Personal communication, phone conversation: Between Brittany Johnson, Environmental Manager, Ashta Chemicals and Phil Norwood, SC&A, Contractor for U.S. EPA, December 4, 2020.

[4] 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.

in a particular case, that a risk that includes an MIR less than the presumptively acceptable level is unacceptable in the light of other health risk factors.'' *Id.* at 38045. In other words, risks that include an MIR above 100-in-1 million may be determined to be acceptable, and risks with an MIR below that level may be determined to be unacceptable, depending on all of the available health information. Similarly, with regard to the ample margin of safety analysis, the EPA stated in the Benzene NESHAP that: ''EPA believes the relative weight of the many factors that can be considered in selecting an ample margin of safety can only be determined for each specific source category. This occurs mainly because technological and economic factors (along with the health-related factors) vary from source category to source category.'' *Id.* at 38061. We also consider the uncertainties associated with the various risk analyses, as discussed earlier in this preamble, in our determinations of acceptability and ample margin of safety.

The EPA notes that it has not considered certain health information to date in making residual risk determinations. At this time, we do not attempt to quantify the HAP risk that may be associated with emissions from other facilities that do not include the source 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.'' [5]

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 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, we review a variety of data sources in our investigation of potential practices, processes, or controls to consider. 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

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

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 Mercury Cell Chlor-Alkali Plant 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; [6] and described in the SAB review report issued in 2010. They are also consistent with the key recommendations contained in that report.

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

The HAP emissions from the single mercury cell chlor-alkali plant includes mercury and chlorine. Hydrochloric acid historically had been associated with these facilities, but based on recent reviews of available information and discussions with Westlake Chemical, we conclude that any HCl emissions from the remaining operating facility in West Virginia are due to non-source category emissions sources such as HCl production operations (*i.e.,* they are not emitted by an affected source subject to the standards applicable to mercury cell chlor-alkali plants). The mercury emissions are emitted from several emission sources within the mercury cell chlor-alkali facility affected source at the one operating mercury cell chlor-alkali plant, which, for the purposes of the source category risk assessment, have been categorized into two general emission process groups: (1) Process vents and (2) fugitives from the mercury cell room building. Based on available data, we conclude the chlorine emissions are mostly or entirely emitted as fugitive emissions associated with the cell room or from pipes or other equipment used to pump the product chlorine to the chlorine storage units or other associated equipment in the mercury cell chlor-alkali facility affected source. The main source of emissions data used in our analyses was the NEI data submitted for calendar year 2017. Data on the numbers, types, dimensions, and locations of the emission points and non-point sources for each facility were obtained from the NEI and Google Earth™. A description of the data, approach, and rationale used to develop actual HAP emissions estimates is discussed in more detail in the document, *Development of the Residual Risk Review Emissions Dataset for the Mercury Cell Chlor-Alkali Plants Source Category,* which is available in the docket (Docket ID No. EPA–HQ–OAR–2020–0560).

2. How did we estimate MACT-allowable emissions?

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

For the Mercury Cell Chlor-Alkali Plants source category, the EPA assumed actual emissions are equal to allowable emissions. Allowable emissions are the estimated emissions that would occur under normal full-capacity operating conditions and as allowed under the applicable MACT standards. There is no available data that suggests the facility is operating at less than full capacity. There is also no evidence that the facility is controlling point source emissions to a degree greater than the emission limitations or that they are performing practices in excess of the required work practices for the control of fugitive emissions. This means that they are not reducing emissions beyond the levels required by the MACT standards which would result in actual emissions being less than allowable emissions. In addition, a review of ECHO indicates no enforcement actions for violations of the title V operating limits over the last 5 years, which would result in actual emissions being greater than allowable. Therefore, we are comfortable with the assumption that actual emissions are equal to the allowable emissions.

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).[7] 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.[8] 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 United States and Puerto Rico. A second library of United States Census Bureau census block [9] internal point locations and

[6] 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.*

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

[8] 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).

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

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

To assess the risk of noncancer health effects from chronic exposure to HAP, we calculate either an HQ or a target organ-specific hazard index (TOSHI). We calculate an HQ when a single noncancer HAP is emitted. Where more than one noncancer HAP is emitted, we sum the HQ for each of the HAP that affects a common target organ or target organ system to obtain a TOSHI. The HQ is the estimated exposure divided by the chronic noncancer dose-response value, which is a value selected from one of several sources. The preferred chronic noncancer dose-response value is the EPA RfC, defined as ''an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime'' (*https://iaspub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&vocabName=IRIS%20Glossary*). In cases where an RfC from the EPA's IRIS is not available or where the EPA determines that using a value other than the RfC is appropriate, the chronic noncancer dose-response value can be a value from the following prioritized sources, which define their dose-response values similarly to the EPA: (1) The Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Level (*https://www.atsdr.cdc.gov/mrls/index.asp*); (2) the CalEPA Chronic Reference Exposure Level (REL) (*https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0*); or (3) as noted above, a scientifically credible dose-response value that has been developed in a manner consistent with the EPA guidelines and has undergone a peer review process similar to that 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,[11] 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 the Mercury Cell Chlor-Alkali Plant Source Category in Support of the 2020 Risk and Technology Review Proposed Rule,* and in Appendix 5 of the report:

[10] 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/214C6E915BB04E14852570CA007A682C/$File/ecadv02001.pdf.*

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

Technical Support Document for Acute Risk Screening Assessment. This revised approach has been used in this proposed rule and in all other RTR rulemakings proposed on or after June 3, 2019.

To assess the potential acute risk to the maximally exposed individual, we use the peak hourly emission rate for each emission point,[12] 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.'' [13] 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.[14] 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.'' [15] *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 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 used a default acute emissions multiplier of 10 as we have no information to suggest another factor to account for variability in hourly emissions data is more appropriate.

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. For this source category, the data refinements employed consisted of estimating the highest HQ that might occur outside facility boundaries with the use of satellite imagery of the facility with receptor locations. These refinements are discussed more fully in the *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the 2020 Risk and Technology Review Proposed Rule,* which is available in the docket for this source category.

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 Mercury Cell Chlor-Alkali Plant source category, mercury emissions were the only PB–HAP emitted by the source category, so we

[12] 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 Mercury Cell Chlor-alkali Plants 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.

[13] 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.*

[14] 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*).

[15] *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.*

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 polycyclic organic matter (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 U.S. Geological Survey (USGS) database to identify actual waterbodies within 50 km of each facility and assume the fisher only consumes fish from lakes within that 50 km zone. We also examine the differences between local meteorology near the facility and the meteorology used in the Tier 1 screening assessment. We then adjust the previously-developed Tier 1 screening threshold emission rates for each PB–HAP for each facility based on an understanding of how exposure concentrations estimated for the screening scenario change with the use of local meteorology and the USGS lakes database.

In the Tier 2 farmer scenario, we maintain an assumption that the farm is located within 0.5 km of the facility and that the farmer consumes meat, eggs, dairy, vegetables, and fruit produced near the facility. We may further refine the Tier 2 screening analysis by assessing a gardener scenario to characterize a range of exposures, with the gardener scenario being more plausible in RTR evaluations. Under the gardener scenario, we assume the gardener consumes home-produced eggs, vegetables, and fruit products at the same ingestion rate as the farmer. The Tier 2 screen continues to rely on the high-end food intake assumptions that were applied in Tier 1 for local fish (adult female angler at 99th percentile fish consumption [16]) and locally grown or raised foods (90th percentile consumption of locally grown or raised foods for the farmer and gardener scenarios [17]). 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.

For further information on the multipathway assessment approach, see the *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* which is available in the docket for this action.

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

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

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

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

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

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

column and benthic sediments), fish consumed by wildlife, and air. Within these four exposure media, we evaluate nine ecological assessment endpoints, which are defined by the ecological entity and its attributes. For PB–HAP (other than lead), both community-level and population-level endpoints are included. For acid gases, the ecological assessment evaluated is terrestrial plant communities.

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

For further information on how the environmental risk screening assessment was conducted, including a discussion of the risk metrics used, how the environmental HAP were identified, and how the ecological benchmarks were selected, see Appendix 9 of the *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* 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 Mercury Cell Chlor-Alkali Plant source category emitted any of the environmental HAP. For the Mercury Cell Chlor-Alkali Plant source category, we identified emissions of mercury and HCl. 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 National Ambient Air Quality Standards (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 *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* 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 2014 NEI. The source category records of that NEI dataset were removed, evaluated, and updated as described in section II.C of this preamble. 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 *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* available through the docket for this action, provides the methodology and results of the facility-wide analyses, including all facility-wide risks and the percentage of source category contribution to facility-wide risks.

For this source category, we conducted the facility-wide assessment using a dataset that the EPA compiled from the 2017 NEI. We used the NEI data for the facility and did not adjust any category or ''non-category'' data. Therefore, there could be differences in the dataset from that used for the source category assessments described in this preamble. We analyzed 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, we made a reasonable attempt to identify the source category risks, and these risks were compared to the facility-wide risks to determine the portion of 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 *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* available through the docket for this action, provides the methodology and results of the facility-wide analyses, including all facility-wide risks and the percentage of source category contribution to facility-wide risks.

7. How do we consider uncertainties in risk assessment?

Uncertainty and the potential for bias are inherent in all risk assessments, including those performed for this proposal. Although uncertainty exists, we believe that our approach, which used conservative tools and assumptions, ensures that our decisions are health and environmentally protective. A brief discussion of the uncertainties in the RTR emissions dataset, dispersion modeling, inhalation exposure estimates, and dose-response relationships follows below. Also included are those uncertainties specific to our acute screening assessments, multipathway screening assessments, and our environmental risk screening assessments. A more thorough discussion of these uncertainties is included in the *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* 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 generally are annual totals for certain years, and they do not reflect short-term fluctuations during the course of a year or variations from year to year. The estimates of peak hourly emission rates for the acute effects screening assessment were based on an emission adjustment factor applied to the average annual hourly emission rates, which are intended to account for emission fluctuations due to normal facility operations.

b. Uncertainties in Dispersion Modeling

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

c. Uncertainties in Inhalation Exposure Assessment

Although every effort is made to identify all of the relevant facilities and emission points, as well as to develop accurate estimates of the annual emission rates for all relevant HAP, the uncertainties in our emission inventory likely dominate the uncertainties in the exposure assessment. Some uncertainties in our exposure assessment include human mobility, using the centroid of each census block, assuming lifetime exposure, and assuming only outdoor exposures. For most of these factors, there is neither an under nor overestimate when looking at the maximum individual risk or the incidence, but the shape of the distribution of risks may be affected. With respect to outdoor exposures, actual exposures may not be as high if people spend time indoors, especially

for very reactive pollutants or larger particles. For all factors, we reduce uncertainty when possible. For example, with respect to census-block centroids, we analyze large blocks using aerial imagery and adjust locations of the block centroids to better represent the population in the blocks. We also add additional receptor locations where the population of a block is not well represented by a single location.

d. Uncertainties in Dose-Response Relationships

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

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]

[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.

[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.

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 from the air onto soils and surface waters and then through the environment into the food web. These HAP represent those HAP for which we can conduct a meaningful multipathway or environmental screening risk assessment. For other HAP not included in our screening assessments, the model has not been parameterized such that it can be used for that purpose. In some cases, depending on the HAP, we may not have appropriate multipathway models that allow us to predict the concentration of that pollutant. The EPA acknowledges that other HAP beyond these that we are evaluating may have the potential to cause adverse effects and, therefore, the EPA may evaluate other relevant HAP in the future, as modeling science and resources allow.

IV. Analytical Results and Proposed Decisions

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

1. MACT standards for Chlorine Emissions

In addition to mercury, based on the NEI, the Westlake, West Virginia, mercury cell chlor-alkali facility emits an estimated 0.24 tpy fugitive emissions of chlorine from the mercury cell chlor-alkali production facility affected source. Chlorine is not emitted from mercury thermal recovery units and furthermore, the facility does not have a mercury thermal recovery unit at the site. In the 2003 final rule, the EPA made the decision not to regulate chlorine and HCl in the Mercury Cell Chlor-Alkali Plant NESHAP based on the authority under section 112(d)(4) of the CAA. Specifically, the EPA based this decision on the ''determination that no further control is necessary because chlorine and HCl are ''health threshold pollutants,'' and chlorine and HCl levels emitted from chlorine production processes are below their threshold values within an ample margin of safety.'' (68 FR 70906, December 19, 2003).

However, the EPA has determined that it must now propose standards for all HAP emissions from the source category, including emissions of chlorine, pursuant to CAA section 112(d)(2) and (3).[22] As discussed in section III.C.1 above, while there are HCl emissions from the direct synthesis HCl production units at the Westlake, West Virginia, facility, they are not from processes that are part of the mercury cell chlor-alkali plant. Therefore, no emission limitations or work practices are being proposed for HCl since the emissions are not from parts of the site that are within the mercury cell chlor-alkali plant. As a result, we are only required to propose standards for chlorine emissions pursuant to CAA section 112(d)(2) and (3).

Fugitive chlorine emissions occur from equipment leaks in the cell room and throughout the other parts of the mercury cell chlor-alkali production facility affected source that handle and process the chlorine gas produced. As stated previously, mercury recovery units are not sources of chlorine emissions.

[22] The EPA not only has authority under CAA section 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 F.3d at 1091–1099.

Section 112 of the CAA generally directs that standards be specified as numerical emission standards, if possible. However, if it is determined that it is not feasible to prescribe or enforce a numerical emission standard, CAA section 112(h) indicates that a design, equipment, work practice, or operational standard may be specified, provided the criteria of CAA section 112(h)(2) are met. Those criteria define ''not feasible to prescribe or enforce an emission standard'' to mean any situation in which the EPA determines that: (1) A HAP or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any federal, state, or local law, or (2) the application of measurement methodology to a particular class of sources is not practicable due to technological and economic reasons. Most fugitive chlorine emission sources at mercury cell chlor-alkali plants are associated with cell rooms. Potential fugitive chlorine emissions are also located in the chlorine processing area. For both the cell room and the chlorine processing area, the fugitive chlorine emissions are primarily due to equipment leaks. Due to the nature of equipment leaks (*i.e.,* low flow rate, occurring from individual pieces of equipment, high variability in time, and location of occurrence) it is technologically and economically impractical to collect the emissions and route them to a control device. As such, we believe that it is not feasible to either prescribe or enforce numerical emission limit(s) for fugitive chlorine emissions from cell rooms or any other location at the facility, under both of the criteria set forth in CAA section 112(h)(2)(A) and (B). Consequently, these proposed standards address fugitive chlorine emission sources at existing mercury cell chlor-alkali production facility affected sources through the establishment of work practice standards. As the NESHAP already effectively prohibits the construction or reconstruction of a mercury cell chlor-alkali production facility, there is no need to establish a new source MACT floor for fugitive chlorine emissions.

There are many incentives for the identification and correction of chlorine leaks and to reduce fugitive chlorine emissions throughout the mecury cell chlor-alkali plant. First, chlorine is a primary product of the process, so lost chlorine equals lost product and lost profit. Second, chlorine, particularly ''wet'' chlorine, is very corrosive to process equipment. Therefore, prompt repair of chlorine leaks reduces damange to process equipment. These corrosive properties also mean that small leaks can quickly become large leaks, which could result in chlorine releases that are dangerous to plant workers and the surrounding community. For these reasons, the Westlake, West Virginia, facility has a program in place to identify and repair fugitive chlorine leaks across the plant. Specifically, Westlake operators perform inspections during each shift to identify leaks of chlorine. Therefore, leaks are detected and corrective actions implemented to minimize and reduce any fugitive chlorine emissions. Based on available information, we understand that the method Westlake uses to identify leaks of chlorine from each piece of equipment is olfactory observations of chlorine gas. If leaks are detected using the olfactory method, the facility takes immediate actions to fix the identified leaks. Furthermore, Westlake has chlorine sensors installed and operated throughout the relevant process units. If one of these sensors measures a chlorine concentration of 2 parts per million by volume (ppmv) or greater, the facility takes action to identify and fix leaks. Since there is only one currently operating mercury cell chlor-alkali plant in the country, the MACT floor for existing sources is represented by the practices in place at the Westlake facility to reduce chlorine fugitive emissions.

As noted above, it is technologically and economically impractical to collect the emissions from every potential leak source at a facility and route them to a control device. The cell room building is generally under negative pressure and the air is routed through the roof vents. As a beyond-the-floor option for fugitive chlorine emissions, we considered requiring the air from the roof vents to be routed to a scrubber or other control device. However, the volume of the air flow from the Westlake cell room is over 700 million cubic feet per day, or almost 500,000 cubic feet per minute. It would be technically infeasible for any control device to handle this volume of gas throughput. Therefore, we rejected this beyond-the-floor option.

Therefore, we are proposing the MACT floor level of control which represents the procedures in place at the Westlake, West Virginia, site. We developed the work practices in the proposed amendments to reflect these procedures, along with associated recordkeeping and reporting requirements to demonstrate compliance. Specifically, we are proposing that facilities must identify and inspect each piece of equipment that contains chlorine gas with a concentration of at least 5 percent chlorine by volume throughout the mercury cell chlor-alkali production facility affected source for leaks at least once each 12 hours. We are requesting comment on whether the 5 percent by volume threshold for defining equipment that must be inspected for chlorine leaks is the appropriate threshold for identifying equipment with the potential to generate fugitive emissions of chlorine gas. Equipment that is under negative pressure would be excluded from this requirement. The method that we are proposing to identify leaks of chlorine from each piece of equipment is olfactory observations of chlorine gas. However, we solicit comments regarding other methods (*e.g.,* auditory or visual) that should also be allowed as a method to identify leaks.

When a leak is detected, we are proposing that a first attempt at repair be conducted within 1 hour of detection and that the leak be repaired within 1 day of detection. We are proposing that a leak is repaired when the evidence of the olfactory observation is eliminated.

Additionally, we are proposing that chlorine sensors be installed and operated continuously (at least one measure every 15 minutes) throughout the affected source. Each time one of these sensors measures a chlorine concentration of 2 ppmv or greater, the proposed rule would require a complete inspection for leaks of all equipment containing 5 percent chlorine by volume within 1 hour of detection. The chlorine sensors that the facility uses must have a detection limit of 2 ppm or less. Furthermore, we propose the sensor must be calibrated and maintained following the manufacturer's recommendations.

We are requesting comment on several aspects of the proposed requirements related to the use of chlorine sensors to identify leaks that may occur between the 12-hour regular inspections. First, we are requesting comment on where these ambient sensors should be located to ensure that chlorine emissions are detected by the ambient monitors. The proposed rule requires that they be placed throughout the mercury cell chlor-alkali manufacturing facility affected source, which includes ''all cell rooms and ancillary operations used in the manufacture of product chlorine, product caustic, and by-product hydrogen.'' We are requesting comment whether the rule should specify areas of the facility where sensors should be located and whether it should specify a

minimum number of sensors. We are requesting comment on the types (*i.e.,* detection methodology) of devices that should be used, the appropriate detection limit for these devices, and whether the devices should be subject to the continuous parameter monitoring requirements in 40 CFR 63.8 of the General Provisions of part 63. We are requesting comment on the appropriate sampling time and whether the proposed requirement that a measurement be taken every 15 minutes is appropriate, as well as the proposed 2 ppmv concentration level that triggers action (*i.e.,* additional inspections). In conjunction, we are requesting comment on whether action should be required based on a single measurement above the 2 ppmv action level, or whether it should be required when measurements averaged over a specified time period exceed 2 ppmv (*e.g.,* if the one-hour average concentration is greater than 2 ppmv). Finally, the proposed rule generically requires that records of all chlorine concentration measurements be maintained. We are requesting comments on whether the rule should include data acquisition system and data format requirements, and if so, what associated requirements might be appropriate.

The proposed rule would require that initial attempts at corrective actions of leaks be taken within 1 hour of detection, and the leak be repaired within 1 day of the date of detection. Records would be required to document the equipment containing more than 5 percent by volume of chlorine and the dates and times the inspections occurred. For each leak identified, records would also be required identifying the piece of equipment with the leak, the date and time it was identified, the date and time a first attempt to repair the leak was performed, the date and time the leak was stopped and repaired, and a description of the repair made to stop the leak. Records would also be required of any deviation from these work practices. Also, the number of leaks found and repaired during the reporting timeframe and any deviations from the work practices would be included in the periodic report.

2. Reconsideration Petition and Beyond-the-Floor Analysis for Mercury

In early 2004, the EPA received a petition for reconsideration pursuant to CAA section 307(d)(7)(B) and a petition for judicial review under CAA section 307(b)(1) from the NRDC regarding the 2003 Mercury Cell Chlor-Alkali MACT standards. In the petition for reconsideration, NRDC claimed that the EPA failed to conduct the required beyond-the-floor analysis under CAA section 112(d)(2) regarding whether to prohibit mercury emissions from existing sources, as the rule did for new and reconstructed sources. In a letter dated April 8, 2004, the EPA informed NRDC that it had granted the petition for reconsideration and would respond to NRDC's petition in a subsequent notice of proposed rulemaking. On July 20, 2004, the court put the litigation into abeyance and directed the EPA to file periodic status reports.

In 2006 and 2007, the EPA conducted a testing program to measure fugitive mercury emissions at two selected facilities to inform the reconsideration. The EPA provided final reports regarding the results of the study to NRDC as required by a joint stipulation filed in the litigation. Both of the studied facilities are no longer operational. On June 11, 2008 (73 FR 33258), the EPA published a proposed rule that provided the EPA's proposed response to the petition for reconsideration, which would require facilities to install and operate a continuous mercury monitoring system in the ''upper portions of the cell room'' and continue to perform the work practice standards (with reduced recordkeeping and reporting requirements and no floor-level monitoring). The EPA received comments from Oceana, PPG Industries, the Chlorine Institute, Olin Chlor-alkali Products, and an anonymous submittal.

Subsequently, in 2011, the EPA published a new proposed rulemaking in response to the petition for reconsideration (76 FR 13852, March 14, 2011). The new proposed rule contained two options that the EPA was considering. The first option was to require remaining existing facilities to convert to a non-mercury technology to produce chlorine as a beyond-the-floor measure under CAA section 112(d)(2). The second option included the combination of the continuous cell room monitoring program and work practice program originally proposed in 2008 as a beyond-the-floor measure. Like for the 2008 proposed rule, the EPA received a number of comments from various stakeholders both for and against the 2011 proposed rulemaking. All of the EPA's technical analyses for the proposed rulemakings, public comments, and other supporting information regarding the 2008 and 2011 proposals are available in the docket for the proposals (Docket ID No. EPA–HQ–OAR–2002–0017). No final action has been taken on the 2008 or 2011 proposals, or to respond to the petition for reconsideration, and the litigation concerning the 2003 NESHAP remains in abeyance with the EPA still subject to the court's order to file periodic status reports.

In conjunction with this proposed RTR action under CAA sections 112(d)(6) and 112(f)(2), the EPA, pursuant to CAA sections 112(d)(2) and (3), re-evaluated whether a beyond-the-floor requirement that facilities must convert to a non-mercury technology within 3 years would still be appropriate based on updated analyses compared to those supporting the 2011 proposal. In 2011 there were four such facilities still in operation. Two of these facilities were the subject of the EPA's studies of fugitive mercury emissions over 2006 and 2007, and they have since shut down. As described above, only one operating facility remains in the U.S. that uses the mercury cell process to produce chlorine. Based on our updated analysis, contained in the docket for this proposed rule, we estimate the capital costs would be about $69 million for the one remaining facility to convert to a non-mercury process. However, there would be savings over time due to the elimination of compliance costs associated with mercury and the higher efficiency and energy savings of switching to the membrane technology. The estimated annual costs, after accounting for the expected savings, are $2.8 million per year for the one remaining mercury cell facility. Based on reported mercury emissions, the cost effectiveness of the conversion is estimated to be $22,000 per pound of mercury emissions eliminated. However, we also note that the cost-effectiveness estimate is uncertain because, first, mercury emissions are based on calculations and assumptions regarding the facility's emissions (no test data are available for this facility), and second, because there are uncertainties with the cost estimates from the 2011 proposal as being transferable to the remaining facility. In the 2011 proposal, the estimated cost effectiveness was $20,000 per pound for the industry (see 76 FR 13852, March 14, 2011), but this was substantially based on the studies conducted for the two no longer operating sources.

Based on consideration of the updated costs and cost effectiveness and uncertainties, and given the passage of time, and the fact that the cost-effectiveness data and analysis done in 2011 were based on two facilities that are no longer operating, we question whether those 2011 analyses would still be transferable to the one remaining operating facility. Consequently, we are not proposing in this action to require the elimination of mercury as a beyond-

the-floor standard under CAA section 112(d)(2). However, we are soliciting comments, data, and other information regarding this proposed decision, including data and information regarding the capital and annual costs, cost effectiveness, non-air impacts, and other relevant information that would be relevant for the remaining facility regarding whether the NESHAP should include a zero-mercury standard as a beyond-the-floor MACT standard. We intend to consider any such submitted data and information, in addition to the data and information contained in the records for the 2008 and 2011 proposals and in this proposal, in reaching final conclusions under CAA section 112(d)(2) regarding a zero-mercury standard beyond-the-floor.

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

As described above, for the Mercury Cell Chlor-Alkali Plant source category, we conducted an inhalation risk assessment for all HAP emitted, a multipathway screening assessment for the PB–HAP emitted, and an environmental risk screening assessment for the PB–HAP emitted from the source category. When we initiated this RTR and developed the risk input files, there were two facilities operating in the source category (Ashta in Ohio and Westlake in West Virginia); however, as noted above, Ashta has since permanently shut down the mercury cell process. We also conducted an environmental screening for HCl, because we initially had some HCl emissions in our data set, but as described above, after further review, we conclude those HCl emissions are due to non-category sources. We present results of the risk assessment briefly below and in more detail in the *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* which is available in the docket for this action.

1. Chronic Inhalation Risk Assessment Results

The EPA estimated inhalation risk is based on actual and allowable emissions. The estimated baseline MIR posed by the source category is less than 1-in-1 million based on actual emissions and MACT-allowable emissions. The total estimated cancer incidence based on actual or allowable emission levels is 0.0000003 excess cancer cases per year, or one case every 3 million years. Emissions of 1,3-dichloropropene from the mercury cell building at Ashta accounted for 100 percent of the cancer incidence. No one is exposed to cancer risk greater than or equal to 1-in-1 million based upon actual and allowable emissions (see Table 1 of this preamble). However, based on the available data, the 1,3-dichloropropene was only emitted from Ashta, which is no longer operating as a mercury cell facility, as discussed above. Furthermore, we have no indication or data suggesting that this pollutant is emitted from the one remaining facility.

The maximum chronic noncancer TOSHI values for the source category were estimated to be less than 1 (0.05) based on actual and allowable emissions. For both actual and allowable emissions, respiratory risks were driven by chlorine emissions from the mercury cell building.

TABLE 1—INHALATION RISK ASSESSMENT SUMMARY FOR MERCURY CELL CHLOR-ALKALI PLANT [1] SOURCE CATEGORY

Risk assessment	Number of facilities [2]	Maximum individual cancer risk (1-in-1 million) [3]	Estimated population at increased risk of cancer ≥ 1-in-1 million	Estimated annual cancer incidence (cases per year)	Maximum chronic noncancer TOSHI [4]	Maximum screening acute noncancer HQ [5]
Baseline Actual Emissions						
Source Category	2	0.004	0	0.0000003	0.05 (respiratory)	2 (REL), 7E–4 (AEGL2).
Facility-Wide	2	0.3	0	0.0001	0.05 (respiratory)	
Baseline Allowable Emissions						
Source Category	2	0.004	0	0.0000003	0.05 (respiratory)	

[1] Based on actual and allowable emissions.
[2] Number of facilities in the risk assessment includes two facilities subject to 40 CFR part 63, subpart IIIII.
[3] Maximum individual excess lifetime cancer risk due to HAP emissions from the source category.
[4] Maximum TOSHI. The target organ with the highest TOSHI for the source category is the respiratory system.
[5] The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. The acute HQ shown was based upon the lowest acute 1-hour dose-response value, the REL for mercury (elemental). When an HQ exceeds 1, we also show the HQ using the next lowest available acute dose-response value.

2. Screening Level Acute Risk Assessment Results

Based on our refined screening analysis of reasonable worst-case acute exposure to actual emissions from the category, both facilities exceeded an HQ of 1 (the HQ was 2) when compared to the 1-hour REL for mercury (elemental). As discussed in section III.C.3.c of this preamble, we used an acute hourly multiplier of 10 for all emission processes. For this HAP, there are no AEGL–1 or ERPG–1 values for comparison, but AEGL–2 or ERPG–2 values are available. For elemental mercury, when the maximum off-site concentration is compared with the AEGL–2 and ERPG–2, the maximum acute noncancer HQ is well below 1 (0.0007).

3. Multipathway Risk Screening Results

PB–HAP emissions (based on estimates of actual emissions) were reported from both facilities in the source category with both exceeding the Tier 1 non-cancer screening threshold emission rate for mercury. A Tier 2 screening analysis was conducted with no facilities having an SV greater than 1 for any scenario (the fisher and farmer had the highest SV at 0.4). There are no carcinogenic PB–HAP emitted from the source category. So, there are no cancer SVs to report. Further details on the Tier 2 screening analysis can be found in the *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* and *Appendix 10* of this report.

An SV in any of the tiers is not an estimate of the cancer risk or a noncancer HQ. Rather, an SV represents a high-end estimate of what the risk or HQ may be. For example, facility emissions resulting in 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, facility emissions resulting in a cancer SV of 20 for a carcinogen means that we are confident that the cancer risk is lower than 20-in-1 million. Our confidence comes from the health-protective assumptions that are incorporated into the screens: we choose inputs from the upper end of the range of possible values for the influential parameters used in the screens, and we assume food consumption behaviors that would lead to high total exposure. This risk assessment estimates the maximum hazard for mercury through fish consumption based on upper bound screens. As discussed above, the maximum mercury Tier 2 noncancer SV based upon the fisher scenario resulted in an SV less than 1.

4. Environmental Risk Screening Results

As described in section III.A of this preamble, we conducted an environmental risk screening assessment for the Mercury Cell Chlor-Alkali Plant source category for the following pollutants: HCl and mercury (methyl mercury and mercuric chloride). However, as noted above, we subsequently determined that the HCl emissions are due to non-category sources such as co-located HCl production.

In the Tier 1 screening analysis, methyl mercury and divalent mercury resulted in exceedances of ecological benchmarks by two facilities. Divalent mercury emissions had Tier 1 exceedances for the following benchmarks: Surface soil threshold level—invertebrate communities by a maximum SV of 4. Methyl mercury had Tier 1 exceedances for the following benchmarks: No Observed Adverse Effect Level (NOAEL)—avian ground insectivores (woodcock) by a maximum SV of 6.

A Tier 2 screening analysis was performed for divalent mercury and methyl mercury. In the Tier 2 screening analysis, divalent mercury emissions had no Tier 2 exceedances. Methyl mercury had Tier 2 exceedances for one facility exceeding the following benchmark: Surface soil NOAEL for avian ground insectivores (woodcock) by a maximum SV of 2 with 0.1 percent of the soil area being above an SV of 2.

For HCl, only one facility reported emissions. The average modeled concentration around this 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. However, as explained above, after further investigation, we conclude that the reported HCl emissions are due to non-category sources.

5. Facility-Wide Risk Results

The EPA estimated inhalation risk based on facility-wide emissions to be 0.3-in-1 million, with an 0.0001 excess cancer cases per year, or one case every 10,000 years. Emissions of metals (arsenic, chromium VI, and nickel) from non-category sources account for 100 percent of the cancer incidence. No one is exposed to cancer risk greater than or equal to 1-in-1 million (see Table 1 of this preamble). The maximum chronic noncancer TOSHI value for the source category was the same for both actual emissions and allowable emissions with an HI less than 1 (0.05) for respiratory risks driven by chlorine emissions from the mercury cell building.

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 mercury cell chlor-alkali plant source category across different demographic groups within the populations living near the two facilities.[23]

Results of the demographic analysis indicate that, for three of the 11 demographic groups, age greater than or equal to 65, age greater than or equal to 25 years of age without a high school diploma, and people below the poverty level, the percentage of the population living 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 mercury cell chlor-alkali plant 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, *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Mercury Cell Chlor-Alkali Plant Source Category Operations,* available 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 explained in section II.A of this preamble, the EPA sets standards under CAA section 112(f)(2) using ''a two-step standard-setting approach, with an analytical first step to determine an 'acceptable risk' that considers all health information, including risk estimation uncertainty, and includes a presumptive limit on MIR of approximately 1-in-10 thousand'' (54 FR 38045, September 14, 1989). The EPA weighed all health risk measures and information, including science policy assumptions and estimation uncertainties, in determining whether risk posed by emissions from the source category is acceptable.

As described above, the maximum cancer risk for inhalation exposure to actual and allowable emissions from the Mercury Cell Chlor-Alkali Plant source category is 0.004-in-1 million, which is more than four orders of magnitude below 100-in-1 million, which is the presumptive upper limit of acceptable risk. The EPA estimates emissions from the category would result in a cancer incidence of 0.0000003 excess cancer cases per year, or one case every 3 million years. Furthermore, as described above, the facility estimated to pose those cancer risks is no longer operating as a mercury cell facility. Inhalation exposures to HAP associated with chronic noncancer health effects result in a TOSHI of 0.05 based on actual and allowable emissions, 20 times below an exposure that the EPA has determined is without appreciable risk of adverse health effects. Exposures to HAP associated with acute noncancer health effects result in an HQ less than or equal to 2 based upon the 1-hour REL for elemental mercury, and when the maximum off-site concentration is compared with the AEGL–2 and ERPG–2, the maximum acute noncancer HQ is

[23] 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.

well below 1 (0.0007). This information, in addition to the conservative (health-protective) assumptions built into the screening assessment, leads us to conclude that adverse effects from acute exposure to emissions of this HAP from this source category are not anticipated. Maximum noncancer hazard due to ingestion exposures estimated using health-protective risk screening assumptions are below an HQ of 1 (0.4) for the Tier 2 fisher scenario. The estimated ingestion cancer risk is zero since we did not identify any carcinogenic HAP emitted from the source category. Considering all of the health risk information and factors discussed above, as well as the uncertainties discussed in section III of this preamble, we propose that the risks posed by emissions from the Mercury Cell Chlor-Alkali Plant source category are acceptable.

2. Ample Margin of Safety Analysis

As directed by CAA section 112(f)(2), we conducted an analysis to determine whether the current emissions standards provide an ample margin of safety to protect public health. Under the ample margin of safety analysis, we evaluated the cost and feasibility of available control technologies and other measures (including the controls, measures, and costs reviewed under the technology review) that could be applied to this source category to further reduce the risks (or potential risks) due to emissions of HAP from the source category.

As described above, the only HAP emitted from this source category posing any risks of potential concern is elemental mercury, with a maximum noncancer acute HQ of 2 based on the REL. Therefore, we considered potential options to reduce mercury emissions under the ample margin of safety analysis. The options we considered under the ample margin of safety analysis are the exact same control options described under the technology review section of this preamble (see section IV.D below).

First, as described in greater detail under the technology review section, we evaluated the option of requiring a combination of implementing a cell room monitoring program and performing work practices as an approach to minimize mercury emissions. Under the technology review section, we determined that this option does constitutes a development in emissions control practices pursuant to CAA section 112(d)(6) with very low costs, and, therefore, we are proposing these requirements under the technology review. However, since the one operating facility already conducts these two actions, we do not expect any actual reductions in emissions and, therefore, we would expect no actual reductions in risks. Since this option is not expected to result in any risk reductions, we are not proposing to adopt those requirements pursuant to CAA section 112(f).

The other option we considered under the CAA section 112(d)(6) technology review (described in section IV.D of this preamble) as well as under CAA sections 112(d)(2) and (3), as described in section IV.A of this preamble, is to require zero mercury emissions from existing sources, which is the requirement for new and reconstructed mercury cell chlor-alkali production sources. This option would eliminate process vent and fugitive mercury emissions as it would force the remaining facility to convert the operation to a non-mercury process or close the mercury cell operation. As described in more detail in sections IV.A and IV.D of this preamble, we estimate the capital cost of converting the one remaining mercury cell facility to membrane cells is just over $69 million. The estimated emissions of mercury would be reduced from 126 pounds to zero pounds per year. Considering the costs of conversion annualized over a time period of 20 years, the annual costs are estimated to be approximately $2.8 million, which results in a cost effectiveness of approximately $22,000 per pound of mercury emissions eliminated. With regard to reductions in risks due to HAP emissions as a result of this option, since this option would force conversion or closure of the remaining one mercury cell facility, the risks due to emissions of HAP for the source category would be zero, since there would be no facilities in the source category.

Nevertheless, after considering the options described above, since the risks due to mercury emissions are already low (with a maximum acute noncancer HQ of less than or equal to 2 based upon the 1-hour REL and a maximum HQ of 0.0007 based on AEGL–2 and ERPG–2), and given the costs described above, and because of the substantial uncertainties in the emissions estimates and cost estimates, we are not proposing any additional standards for mercury under CAA section 112(f).

In summary, considering the very low cancer risks (MIR far less than 1-in-1 million) and very low chronic noncancer risks (HI of 0.05) to individuals exposed to HAP emitted from this source category, and after considering possible options for mercury as described above, we are proposing a determination that the existing standards provide an ample margin of safety to protect public health.

3. Adverse Environmental Effect

Based on the results of the environmental risk screening analysis, we do not expect an adverse environmental effect, as defined by CAA section 112(a)(7), as a result of HAP emissions from this source category, and we are proposing that it is not necessary to set a more stringent standard to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.

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

As noted above, 40 CFR part 63, subpart IIIII currently includes emission limitations for mercury emissions from process vents (including emissions from end-box ventilation systems, hydrogen systems, and mercury recovery facilities) and work practices for fugitive mercury emissions from the cell room. We have identified a development for cell room fugitive mercury emissions.

With regard to fugitive mercury emissions from the cell room, the current rule at 40 CFR 63.8192(a) through (f) requires a suite of equipment standards and work practices. It also provides the option, in lieu of the work practices otherwise required under CAA sections 63.8192(a) through (d), to institute a cell room monitoring program to continuously monitor the mercury vapor concentration in the upper portion of each cell room. See 40 CFR 63.8192 introductory text, and 40 CFR 63.8192(g). The single mercury cell facility still operating complies via this alternative. However, while not required to do so under the current regulation, the facility also performs all the work practices. Therefore, the EPA determined that the combination of implementing a cell room monitoring program and performing work practices constitutes a development in emissions control practices. This combination was the proposed option in the June 11, 2008, action (73 FR 33258), and also included as a co-proposal in the March 14, 2011 (76 FR 13852), action. Since the only facility in the source category is already implementing the monitoring program and performing these work practices, there would be no costs (with the exception of additional recordkeeping and reporting costs) or additional mercury emission reductions associated with implementing a standard that requires a combination of these practices.

We also identified the option to require zero mercury emissions from existing sources, which is the requirement for new and reconstructed mercury cell chlor-alkali production sources. This option would eliminate process vent and fugitive mercury emissions as it would force the remaining facility to convert the operation to a non-mercury process, or close the mercury cell operation, by a date no later than 3 years of the date of publication of the final rule. See CAA section 112(i)(3)(A). When the EPA originally listed the Chlorine Production source category in 1992, there were 13 mercury cell chlor-alkali plants in the U.S. Since that time, the number of facilities has steadily declined to the current situation with only one facility. Many owners of mercury cell facilities converted to the more efficient and more environmentally friendly membrane cell technology, while other mercury cell chlor-alkali plant owners have concluded the investment decision was currently not in their company's interest given their assessment of future economic conditions and have shut down their mercury cell chlor-alkali plants entirely. Therefore, the zero mercury emissions option is a demonstrated potential development in processes pursuant to CAA section 112(d)(6).

The EPA has considered this option previously since the promulgation of the regulation in 2003, in the context of evaluating whether a prohibition on mercury emissions would be a reasonable beyond-the-floor MACT measure under CAA section 112(d)(2). As discussed above, in 2008, the EPA proposed amendments to 40 CFR part 63, subpart IIIII (73 FR 33258, June 11, 2008). One of the options evaluated for this 2008 proposal was to require zero mercury emissions, and the EPA evaluated the impacts of requiring conversion of mercury cell chlor-alkali production plants to non-mercury technology. The EPA proposed ''to reject conversion to non-mercury technology as a beyond-the-floor control requirement because of the high cost impact this forced conversion would impose on the facilities in the industry.'' As noted above, the EPA proposed the combination of mercury cell room monitoring and work practices in the 2008 action (73 FR 33275).

Considering comments received on the 2008 proposed cost and impacts analysis of the option to convert to non-mercury technology, the EPA significantly refined the analysis. The results of the revised analyses were published in 2011, along with two proposed options to reduce mercury emissions. One was an option to require all mercury cell chlor-alkali facilities to comply with a zero-mercury emissions limitation within 3 years of the finalization of the proposal (76 FR 13852, March 14, 2011). The other proposed option was to require continuous monitoring of mercury in the upper regions of the cell room along with work practices, as under the 2008 proposal (and as being proposed here under CAA section 112(d)(6)). The revised analysis of the impacts of conversion from mercury cells to membrane cells is discussed in detail in the 2011 proposal and supporting documentation.

Comments were received on the updated analysis and supplemental 2011 proposal. An environmental advocacy commenter (Docket Item No. EPA–HQ–OAR–2002–0017–0152) supported the proposed zero-mercury option but also commented that the EPA had overstated the costs and understated the emission reductions and other benefits. Conversely, three industry representatives (Docket Item Nos. EPA–HQ–OAR–2002–0017–0150, –0151, and –0157) commented that the EPA's revised analysis had underestimated the costs and negative economic impacts and overstated the benefits. One industry representative (Docket ID No.EPA–HQ–OAR–2002–0150) provided an analysis of the impacts of conversion specific to the West Virginia facility (which is, as discussed previously, the only mercury cell plant currently still in operation). The commenter indicated that the cost of conversion estimated by the EPA for this facility (around $43 million) was considerably less than the estimates calculated by the facility (around $60 million). The commenter also provided a cost-effectiveness analysis, which showed a cost of over $77,000 per pound of mercury emissions eliminated for this facility. The EPA has not yet finalized either of the options included in the 2011 supplemental proposal, or otherwise issued a final beyond-the-floor MACT determination under CAA section 112(d)(2) for existing source mercury emissions, as discussed above.

For this proposal, the EPA re-examined the impacts of a zero-mercury option. Specifically, the EPA evaluated the costs and cost effectiveness of the replacement of the West Virginia mercury cell facility with a membrane cell facility. As pointed out above, the EPA's 2011 estimate for the capital cost to convert the West Virginia facility was just over $43 million and an annual cost of $2.6 million per year. The EPA updated this estimate by adjusting the costs to 2019 dollars and incorporating the actual costs of conversion incurred by the Ohio facility for their 2019/2020 conversion. The resulting updated estimate is that the capital cost of converting the West Virginia mercury cell facility to membrane cells is just over $69 million. The estimated emissions of mercury would be reduced from 126 pounds to zero pounds per year. Considering the costs of conversion annualized over a time period of 20 years, the annual costs are estimated to be approximately $2.8 million, which results in a cost effectiveness of approximately $22,000 per pound of mercury emissions eliminated.[24] While some commenters have suggested that the EPA's estimates of mercury emissions from mercury cell chlor-alkali facilities are underestimated due to ''unaccounted for'' mercury, the EPA's detailed study conducted prior to the 2008 proposal demonstrated otherwise. Specifically, the EPA stated ''The results of the almost one million dollar study of fugitive emissions from mercury cell chlor-alkali plants sponsored by EPA enables us to conclude that the levels of fugitive emissions for mercury chlor-alkali plants are much closer to the assumed emissions in the part 61 Mercury NESHAP, of 1,300 grams/day/plant (around 0.5 tons/yr/plant) than the levels assumed by NRDC (3 to 5 tons/yr/plant). The results of this study suggest that the emissions are routinely less than half of the 1,300 grams/day level, with overall fugitive emissions from the five operating facilities estimated at less than 1 ton per year of mercury.'' (73 FR 32666). This study, and the EPA's basis for their conclusion regarding the magnitude of mercury emissions from these facilities, is discussed in detail in the 2008 proposal (73 FR 33262 through 33267). In addition, the West Virginia facility is required under an agreement with the Attorney General of Maryland to limit mercury emissions from the facility to less than 150 pounds per year.[25]

The EPA also examined the non-air impacts associated with switching from mercury cell to non-mercury cell processes. For 2019, the West Virginia facility reported a total of 898.1 pounds of non-air mercury releases. This consists of 9 pounds to streams/water bodies, 883.3 pounds to Resource

[24] Memorandum. Norwood, P., SC&A, Inc. to Mulrine, P., EPA. *Updated Cost Analysis for Conversion of Mercury Cell Chlor-Alkali Plants to Membrane Cells.* December 3, 2020.

[25] *PPG to Lower Mercury Emissions at Natrium Plant. Environmental Protection Online.* August 25, 2009. Available at *https://eponline.com/Articles/2009/08/25/PPG-to-Lower-Mercury-Emissions-at-Natrium-Plant.aspx?Page=1&p=1.*

Conservation and Recovery Act, Subtitle C Landfills, and 5.8 pounds to other offsite sources. All these releases would be eliminated with the conversion to non-mercury cell processes. While the promulgation of a zero-mercury standard would eliminate these ongoing releases, there would be environmental impacts associated with the dismantling and decommissioning of the West Virginia mercury cell plant. In 2008, the EPA estimated that these activities would result in over 4,000 pounds of mercury in wastes (for example, from contaminated piping and other equipment). We believe this estimate still represents a reasonable estimate of the wastes that would be generated. In addition, the facility would need to deal with the several hundred tons of elemental mercury that is currently contained in the cells. The options for storing this mercury are limited by the Mercury Export Ban Act of 2008. The only realistic options for long-term storage of this mercury are to send it to U.S. Department of Energy storage facilities or to continue to store it onsite, both of which would result in ongoing costs to the facility.

Based on these factors, we are not proposing the option of a zero-mercury standard as part of our CAA section 112(d)(6) technology review for this source category at this time. Moreover, as we are now uncertain whether the assessments supporting the 2011 proposed option to require elimination of mercury emissions from existing sources continue to represent accurate estimates of the costs of requiring such elimination at the single remaining plant, we are proposing that promulgating a zero-mercury standard for existing sources would not be a reasonable beyond-the-floor MACT standard under CAA section 112(d)(2). However, we are soliciting comments, data, and other information regarding these proposed decisions, including data and information regarding the costs, cost effectiveness, non-air, and economic impacts and other relevant information regarding whether the NESHAP should include a zero-mercury standard as either a beyond-the-floor MACT standard or a revised standard under the technology review, and whether the proposed work practices for chlorine emissions and proposed amendments to the mercury work practices would be necessary if a zero-mercury standard were to be adopted. We intend to consider any such submitted data and information, in addition to the data and information contained in the records for the 2008 and 2011 proposals and in this proposal, in reaching final conclusions under CAA sections 112(d)(2) and (6) regarding a zero-mercury standard.

Based on the analyses discussed above, we are proposing the first option, which is to amend the rule to require both a cell room monitoring program and work practice standards. Specifically, the proposed amendments would require, beginning 6 months after the final rule is published, compliance with all work practices in the rule and associated recordkeeping and reporting requirements plus the cell room monitoring program. The exception is the work practice to develop and follow a floor-level mercury vapor measurement program required at 40 CFR 63.8192(d). The cell room monitoring program is similar to the floor-level program, except that it is more comprehensive and effective as it detects increased mercury levels throughout the cell room, while the floor-level program only detects increased levels near the floor-level walkways.

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 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 reporting of performance test results, notifications, and reports. We are also proposing two amendments to correct errors and improve the compliance provisions in the rule, as well as proposing amendments to address applicability for thermal mercury recovery units when chlorine and caustic are no longer produced in mercury cells. Our analyses and proposed changes related to these issues are discussed below.

1. SSM

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 (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.

Consistent with *Sierra Club* v. *EPA,* we are proposing the elimination of the SSM exemptions in this NESHAP, and we are proposing that the emissions standards will apply at all times. We are also proposing several revisions to Table 5 (the General Provisions Applicability Table) which are explained in more detail below. For example, we are proposing to eliminate the incorporation of the General Provisions' requirement that sources develop an SSM plan. We also are proposing to eliminate and revise certain recordkeeping and reporting requirements related to the SSM exemption as 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 specifically seeking comment on whether we have successfully done so.

In proposing the standards in this rule, the EPA has considered startup and shutdown periods and, for the reasons explained below, is not proposing alternate standards for those periods. In 2011, the EPA proposed similar revisions to the SSM provisions as those being proposed here. During the comment period for the 2011 rule, the mercury cell chlor-alkali industry indicated that there were safety concerns associated with complying with the emissions standards during startup for the hydrogen vent stream. The industry provided general information that suggested that the control device could not be operated until the exhaust stream composition could be regulated. However, no additional data or information has been received since 2011, and it is unclear whether the one operating facility in the source category would violate its emissions standards during these startup times, whether the facility has changed operations since the 2011 rule to be able to comply with the emissions standards during startup, or whether there are other practices or standards that could apply during these periods to ensure emissions are limited or reduced. In the absence of evidence that the emissions standards cannot be met during startup, the EPA is proposing that the emissions standards apply at all times. However, we solicit comment and detailed information for any situations where separate standards, such as work practices, would be more appropriate during periods of startup and shutdown rather than the current standard.

Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead they are, by definition, sudden, infrequent, and not reasonably preventable failures of emissions control, process, or monitoring equipment. (40 CFR 63.2) (definition of malfunction). The EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards, and this reading has been upheld as reasonable by the court in *U.S. Sugar Corp.* v. *EPA,* 830 F.3d 579, 606–610 (2016). 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 (or the average emission limitation achieved by the best performing sources where, as here, there are fewer than 30 sources in the source 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 offline 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.

In the unlikely event that a source fails to comply with the applicable CAA section 112(d) standards as a result of a malfunction event, the EPA would 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 would 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 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).

a. General Duty, SSM Plan, and Compliance with Standards

We are proposing to revise the General Provisions Applicability Table (Table 10) entry for ''§ 63.6(a)–(g), (i), (j)'' to ''§ 63.6(a)–(g), (i), (j), except for (e)(1)(i) and (ii), (e)(3), and (f)(1)'' and to add a new entry for ''§ 63.6(e)(1)(i) and (ii), (e)(3), and (f)(1),'' in which a ''No'' entry would be included in the column, ''Applies to Subpart IIIII.'' 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 63.8222 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

and SSM events in describing the general duty. Therefore, the language the EPA is proposing for 40 CFR 63.8222 does not include that language from 40 CFR 63.6(e)(1). In addition, 40 CFR 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 63.8222. Generally, 40 CFR 63.6(e)(3) requires development of an SSM plan and specifies SSM recordkeeping and reporting requirements related to the SSM plan. 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. The current language of 40 CFR 63.6(f)(1) exempts sources from nonopacity standards during periods of SSM. As discussed above, the court in *Sierra Club* v. *EPA* 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* v. *EPA,* the EPA is proposing that the standards in this rule apply at all times.

b. Performance Testing

We are proposing to revise the General Provisions Applicability Table (Table 10) entry for ''§ 63.7(a)(1), (b)–(h)'' to ''§ 63.7(a)–(h), except for (a)(2) and (e)(1)'' and to add a new entry for ''§ 63.7(e)(1),'' in which a ''No'' entry would be included in the column, ''Applies to Subpart IIIII.'' Section 63.7(e)(1) describes performance testing requirements. The EPA is instead proposing to add a performance testing requirement at 40 CFR 63.8232(a). The performance testing requirements we are proposing to add differ from the General Provisions performance testing provisions in several respects. The regulatory text removes the cross-reference to 40 CFR 63.7(e)(1) and 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 not allow performance testing during startup and shutdown events. 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. The EPA is proposing to add language that requires the owner or operator to record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Section 63.7(e) requires that the owner or operator make available to the Administrator such records ''as may be necessary to determine the condition of the performance test'' available to the Administrator upon request but does not specifically require the information to be recorded. The regulatory text the EPA is proposing to add to this provision builds on that requirement and makes explicit the requirement to record the information.

c. Monitoring

We are proposing to revise the General Provisions Applicability Table (Table 10) entry for ''§ 63.8(a)(1), (a)(3); (b); (c)(1)–(4), (6)–(8); (d); (e); and (f)(1)–(5)'' to ''§ 63.8(a)(1), (a)(3); (b); (c)(1)(ii), (2)–(4), (6)–(8); (d)(1)–(2); (e); and (f)(1)–(5)'' and to add entries for ''§ 63.8(c)(1)(i) and (iii)'' and ''§ 63.8(d)(3)'' in which a ''No'' entry would be included in the column, ''Applies to Subpart IIIII,'' for the new entries. The cross-references to the general duty and SSM plan requirements in subparagraphs 40 CFR 63.8(c)(1)(i) and (iii) are not necessary in light of other requirements of 40 CFR 63.8 that require good air pollution control practices (40 CFR 63.8(c)(1)) and that set out the requirements of a quality control program for monitoring equipment (40 CFR 63.8(d)). In addition, the final sentence in 40 CFR 63.8(d)(3) refers to the General Provisions' SSM plan requirement which is no longer applicable. The EPA is proposing to add to the rule at 40 CFR 63.8242(a)(3)(v) text that is identical to 40 CFR 63.8(d)(3) except for the final sentence with the reference to SSM.

d. Recordkeeping and Reporting

We are proposing to revise the General Provisions Applicability Table (Table 10) entry for ''§ 63.10(a); (b)(1); (b)(2)(i)–(xii), (xiv); (b)(3); (c); (d)(1)–(2), (4)–(5); (e); (f)'' to ''§ 63.10(a); (b)(1); (b)(2)(vi)–(xii), (xiv); (b)(3); (c)(1)–(14); (d)(1)–(2), (4); (e); (f)'' and to add entries for ''§ 63.10(b)(2)(i)–(v),'' ''§ 63.10(c)(15),'' and ''§ 63.10(d)(5),'' in which a ''No'' entry would be included in the column, ''Applies to Subpart IIIII,'' for the new entries. 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.

Section 63.10(b)(2)(ii) describes the recordkeeping requirements during a malfunction. The EPA is proposing to add such requirement to 40 CFR 63.8256(a)(2). The regulatory text we are proposing to add differs from the General Provisions it is replacing 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. The EPA is proposing that this requirement apply to any deviation from an applicable requirement, which would include malfunctions, and is requiring that the source record the date, time, and duration of the deviation rather than the ''occurrence.'' The EPA is also proposing to add requirements to 40 CFR 63.8256(a)(2) a requirement that sources 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 standard for which the source failed to meet the standard, and a description of the method used to estimate the emissions. Examples of such methods would include product loss calculations, mass balance calculations, measurements when available, or engineering judgment based on known process parameters. The EPA is proposing to require that sources keep records of this information to ensure 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.

When applicable, 40 CFR 63.10(b)(2)(iv) requires sources to record actions taken during SSM events when actions were inconsistent with their SSM plan. The requirement is no longer appropriate because SSM plans 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 required by 40 CFR 63.8256(a)(2).

When applicable, 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.

The EPA is also proposing that 40 CFR 63.10(c)(15) no longer applies. 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.

Section 63.10(d)(5) describes the reporting requirements for SSM. To replace the General Provisions reporting requirement, the EPA is proposing to add reporting requirements to 40 CFR 63.8254(b)(8) and (9). This language differs from the General Provisions requirement in that it does not require a stand-alone report. With this revision, we are proposing that sources that fail to meet an applicable standard or regulatory requirement at any time report the information concerning such events in the semi-annual compliance report already required under this rule. We are proposing that the report must contain the number, date, time, duration, and the cause of such events (including unknown cause, if applicable), a list of the affected source or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available, or engineering judgment based on known process parameters. The EPA is proposing this requirement to ensure that there is adequate information to determine compliance, to allow the EPA to determine the severity of the failure to meet an applicable standard, and to provide data that may document how the source met the general duty to minimize emissions during a failure to meet an applicable standard.

We will no longer require owners or operators to determine whether actions taken to correct a malfunction are consistent with an SSM plan, because SSM plans would no longer be required. The proposed amendments, therefore, eliminate the cross-reference to 40 CFR 63.10(d)(5)(i) that contains the description of the previously required SSM report format and submittal schedule from this section. These specifications are no longer necessary because the events will be reported in otherwise required reports with similar format and submittal requirements.

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

2. Electronic Reporting

The EPA is proposing that owners and operators of mercury cell chlor-alkali plants submit electronic copies of required performance test reports, notifications, and reports through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). A description of the electronic data submission process is provided in the memorandum, *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules,* available in the docket for this action. The proposed rule requires that performance test results collected using test methods that are supported by the EPA's Electronic Reporting Tool (ERT) as listed on the ERT website [26] at the time of the test be submitted in the format generated through the use of the ERT or an electronic file consistent with the xml schema on the ERT website, and other performance test results be submitted in portable document format (PDF) using the attachment module of the ERT. The proposed rule requires that each notification—such as a Revised NOCS—and each report—such as a semiannual report—be submitted as a PDF upload in CEDRI.

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 which 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 [27] to implement Executive Order 13563 and is in keeping with the EPA's agency-wide policy [28] developed in response to the White House's Digital Government Strategy.[29] 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*

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

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

[28] *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.*

[29] *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.*

Hazardous Air Pollutants (NESHAP) Rules, referenced earlier in this section.

3. Compliance Provisions Rule Corrections

We are proposing amendments to correct errors and improve the compliance provisions of the rule. These changes, which are described below, were included in the March 14, 2011, proposal (76 FR 13865) and the June 2008 proposal (73 FR 33275).

a. Detection Limit for Mercury Monitor Analyzers

Paragraph 63.8242 (a)(2) requires mercury continuous monitor analyzers to have a detector capable of detecting a mercury concentration at or below 0.5 times the mercury concentration level measured during the performance test. Since promulgation of the NESHAP, we have realized that detecting a concentration of 0.5 times the mercury concentration could, in cases of low mercury concentrations, be infeasible for the monitoring devices on the market. Information available to us at this time shows that 0.1 µg/m3 is the detection limit of commonly commercially available analyzers. Analyzers with detection limits at this level are more than sufficient to determine compliance with the limitations in the NESHAP. Therefore, we are proposing to revise this paragraph to require a detector capable of detecting a mercury concentration at or below 0.5 times the mercury concentration measured during the test or 0.1 µg/m3.

b. Averaging Period for Mercury Recovery Unit Compliance

The NESHAP is inconsistent as to whether the rule requires a daily average or an hourly average to determine continuous compliance with the emissions standard for mercury recovery units. While 40 CFR 63.8243(b) indicates that this averaging period is daily, another paragraph, 40 CFR 63.8246(b), states that limit is based on the average hourly concentration of mercury. It was our intention for compliance to be based on a daily average, and the inclusion of ''hourly'' in 40 CFR 63.8246 (b) was a drafting error. Therefore, we are proposing to correct this error by replacing ''hourly'' in 40 CFR 63.8246(b) with ''daily.''

4. Applicability for Mercury Recovery Units

As discussed previously, all but one mercury cell plant has closed or converted to membrane cells since the promulgation of the 2003 Mercury Cell Chlor-Alkali Plants MACT. When these situations have occurred at plants with on-site thermal mercury recovery units, it has been common for these units to continue to operate to assist in the treatment of wastes associated with the shutdown/conversion. We are not aware of any mercury recovery units still in operation and the Westlake, West Virginia, facility does not operate a thermal mercury recovery unit that is subject to the emission limitations in the rule. Regardless, under the applicability of the 2003 Mercury Cell Chlor-Alkali Plants MACT, these units would no longer be an affected source after the chlorine production facility ceased operating. Furthermore, while the NESHAP already effectively prohibits the construction or reconstruction of a new mercury cell chlor-alkali production facility, it does not do the same for mercury recovery facilities. Therefore, there exists the possibility that there is an existing mercury recovery unit of which we are unaware or that a mercury recovery facility subject to new source standards could be constructed or reconstructed. Therefore, these proposed amendments would require any mercury recovery unit to comply with the requirements of the Mercury Cell Chlor-Alkali Plants MACT for such units, as long as the mercury recovery unit operates to recover mercury from wastes generated by a mercury cell chlor-alkali plant.

F. What compliance dates are we proposing?

From our assessment of the time frame needed for compliance with the entirety of the revised requirements, the EPA considers a period of 6 months to be the most expeditious compliance period practicable and, thus, is proposing that the affected source be in compliance with all of this regulation's revised requirements within 6 months of the regulation's effective date.

For existing sources, we are proposing two changes to the work practice standards. While these proposed work practice standards are based on the practices in place at the single facility in the source category, they will require some modifications to the procedures currently employed at the facility. Specifically, they will need to develop and implement a recordkeeping system to record and maintain the records required for the mercury cell work practices and to incorporate the required material in the requisite reports. Also, while the facility has standard operating procedures in place to reduce fugitive emissions of chlorine upon which the proposed requirements are based, they will need to develop and implement a recordkeeping system to record and maintain the records required for the fugitive chlorine inspection requirements and to incorporate the required material in the requisite reports. We propose that a 6-month period of time would be adequate for these activities.

In addition, we are proposing to add a requirement that notifications, performance test results, and compliance reports be submitted electronically. We are also proposing to change the requirements for SSM by removing the exemption from the requirements to meet the standards during SSM periods and by removing the requirement to develop and implement an SSM plan. 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 3 months, and, more typically, 6 months is generally necessary to successfully accomplish these revisions. Our experience with similar industries further shows that this sort of regulated facility generally requires a time period of 6 months to read and understand the amended rule requirements; to evaluate their operations to ensure that they can meet the standards during periods of startup and shutdown as defined in the rule and make any necessary adjustments; and to update their operation, maintenance, and monitoring plans to reflect the revised requirements.

We solicit comment on the 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?

There is only one mercury cell chlor-alkali facility currently operating in the U.S. The facility will be subject to the Mercury Cell Chlor-Alkali Plants NESHAP affected by the proposed amendments to 40 CFR part 63, subpart IIIII.

B. What are the air quality impacts?

We are not proposing revisions to the mercury emission limits for process vents other than to make them applicable during SSM periods, and we do not anticipate any air quality impacts as a result of this proposed amendment, since the one subject facility is already in compliance with emission limits during all periods, including SSM. We are proposing changes to require both the mercury cell room monitoring program and the work practice standards for fugitive mercury emissions, and are proposing new work practice standards for fugitive chlorine emissions. However, these proposed changes are based on the current practices in place at the one subject facility. Therefore, we also do not anticipate any air quality impacts as a result of these proposed amendments to the work practices.

C. What are the cost impacts?

As noted earlier, the single facility in the source category is complying with the alternative cell room monitoring program. While not currently required, the facility is also implementing the work practices. Therefore, the only costs that would be incurred with the proposed requirement to comply with both the cell room monitoring program and the work practices are those costs associated with the work practice recordkeeping and reporting. We estimate these costs to be $36,000 per year for the mercury work practices recordkeeping and reporting and $49,000 for the chlorine inspection program recordkeeping and reporting (all costs in 2020 dollars). Another way to present these costs is to show them in terms of present value, in which the stream over time of costs per year for the proposal requirement is discounted to the present day. For this proposal, the present value of the costs in total is $445,000 in 2020 dollars, calculated over an 8-year period from 2022 to 2029 (assuming promulgation in 2021), estimated at a 7 percent discount rate and discounted to 2020. The equivalent annualized value of these costs, which is an annualized value of costs consistent with the present value, is $74,500 in 2020 dollars, and also estimated at a 7 percent discount rate and discounted to 2020.

D. What are the economic impacts?

Economic impact analyses focus on changes in market prices and output levels. If changes in market prices and output levels in the primary markets as a result of complying with the rule are significant enough, impacts on other markets may also be examined. Both the magnitude of costs needed to comply with a proposed rule and the distribution of these costs among affected facilities can have a role in determining how the market prices and output levels will change in response to a proposed rule. The total cost associated with this proposed rule is estimated to be $85,000 per year in 2020 dollars, which is the cost associated with additional recordkeeping and reporting costs. The economic impact associated with this cost, calculated as an annual cost per sales, for the parent firm owning the single affected facility is 0.001 percent, and is not expected to result in a significant market impact, regardless of whether it is fully passed on to the consumer or fully absorbed by the affected firm.

E. What are the benefits?

The EPA does not anticipate reductions in HAP emissions as a result of the proposed amendments to the Mercury Cell Chlor-Alkali Plants NESHAP. However, the proposed amendments would improve the rule by codifying the existing practices to reduce emissions into enforceable requirements, ensuring that the standards apply at all times. Also, requiring electronic submittal of initial notifications, performance test results, and reports will increase the usefulness of the data and ultimately result in less burden on the regulated community. Because these proposed amendments are not considered economically significant, as defined by Executive Order 12866, and because no emission reductions were estimated, we did not estimate any health benefits from reducing emissions.

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 RTR website at *https://www.epa.gov/stationary-sources-air-pollution/mercury-cell-chloralkali-plants-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 RTR website, complete the following steps:

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

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

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

4. Send the entire downloaded file with suggested revisions in Microsoft® Access format and all accompanying documentation to Docket ID No. EPA–HQ–OAR–2020–0560 (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/mercury-cell-chloralkali-plants-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 Orders 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 rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2046.10. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

The information requirements in this rulemaking are based on the notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emission standards. These notifications, reports, and records are essential in determining compliance, and are specifically authorized by CAA section 114 (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies set forth in 40 CFR part 2, subpart B.

The EPA is proposing amendments that revise provisions pertaining to emissions during periods of SSM; add requirements for electronic reporting of notifications and reports and performance test results; and make other minor clarifications and corrections. This information will be collected to assure compliance with the Mercury Cell Chlor-Alkali Plants NESHAP.

Respondents/affected entities: Owners or operators of mercury cell chlor-alkali facilities.

Respondent's obligation to respond: Mandatory (42 U.S.C. 7414).

Estimated number of respondents: One total for the source category. This facility is already a respondent and no new facilities are expected to become respondents as a result of this proposed action.

Frequency of response: Initially, occasionally, and semi-annually.

Total estimated burden: 3,567 total hours (per year) for the source category, of which 1,680 are estimated as a result of this action. Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: The total estimated cost of the rule is $428,000 (per year) for the source category, including $8,200 annualized capital or operation and maintenance costs. We estimate that $0 of the $8,200 in total annualized capital or operation and maintenance costs is a result of this proposed action. Recordkeeping and reporting costs of $205,000 estimated as a result of this action are included in the $428,000 in total costs.

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_submissions@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 8, 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. This action will not impose any requirements on small entities. The parent company for the single affected facility in the source category is not a small entity given the Small Business Administration small business size definition for this industry (1,000 employees or greater for NAICS 325180).

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. The mercury cell chlor-alkali plant affected by this proposed action is not owned or operated by tribal governments or located within 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. As the proposed rule amendments would not change emissions of HAP and risk to anyone exposed, the EPA estimates that the proposed rule amendments would have no effect on risks to children. This action's health and risk assessments are contained in section IV.B of this preamble and the document, *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plant Source Category in Support of the Risk and Technology Review 2020 Proposed Rule,* which is available in the docket for this rulemaking.

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 change the existing technical standards in the rule.

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) because it does not change the level of environmental protection for any affected populations and does not have any disproportionately high and adverse human health or environmental effects on any population, including any

minority, low income, or indigenous populations.

To gain a better understanding of the source category and near source populations, the EPA conducted a demographic analysis for mercury cell chlor-alkali facilities to identify any overrepresentation of minority, low income, or indigenous populations with cancer risks above 1-in-1 million. This analysis only gives some indication of the prevalence of sub-populations that may be exposed to air pollution from the sources; it does not identify the demographic characteristics of the most highly affected individuals or communities, nor does it quantify the level of risk faced by those individuals or communities. More information on the source category's risk can be found in section IV of this preamble. The complete demographic analysis results and the details concerning its development are presented in the technical report, *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Mercury Cell Chlor-Alkali Facilities,* 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. 2021–00174 Filed 1–7–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2020–0535; FRL–10018–38–OAR]

RIN 2060–AU65

National Emission Standards for Hazardous Air Pollutants: Primary Magnesium Refining Residual Risk and Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This proposal presents the results of the U.S. Environmental Protection Agency's (EPA's) residual risk and technology review (RTR) for the National Emission Standards for the Hazardous Air Pollutants (NESHAP) for Primary Magnesium Refining, as required under the Clean Air Act (CAA). Based on the results of the risk review, the EPA is proposing that risks from emissions of air toxics from this source category are acceptable and that after removing the exemptions for startup, shutdown, and malfunction (SSM), the NESHAP provides an ample margin of safety. Furthermore, under the technology review, we are proposing one development in technology and practices that will require continuous pH monitoring for all control devices used to meet the acid gas emission limits of this subpart. In addition, as part of the technology review, the EPA is addressing a previously unregulated source of chlorine emissions, known as the chlorine bypass stack (CBS), by proposing a maximum achievable control technology (MACT) emissions standard for chlorine emissions from this source. The EPA also is proposing amendments to the regulatory provisions related to emissions during periods of SSM, including removing exemptions for periods of SSM and adding a work practice standard for malfunction events associated with the chlorine reduction burner (CRB); all emission limits will apply at all other times. In addition, the EPA is proposing electronic reporting of performance test results and performance evaluation reports.

DATES: *Comments.* Comments must be received on or before February 22, 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 8, 2021.

Public hearing: If anyone contacts us requesting a public hearing on or before January 13, 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–2020–0535, 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–2020–0535 in the subject line of the message.
- *Fax:* (202) 566–9744. Attention Docket ID No. EPA–HQ–OAR–2020–0535.
- *Mail:* U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA–HQ–OAR–2020–0535, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- *Hand/Courier Delivery:* EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. The Docket Center's hours of operation are 8:30 a.m.–4:30 p.m., Monday–Friday (except federal holidays).

Instructions: All submissions received must include the Docket ID 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 Michael Moeller, Sector Policies and Programs Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2766; fax number: (919) 541–4991 and email address: *moeller.michael@epa.gov.* For specific information regarding the risk modeling methodology, contact Jim Hirtz, 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) 541–0881; fax number: (919) 541–0840; and email address: *hirtz.james@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