ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2010–0544; FRL–9919–33–OAR]

RIN 2060–AQ40

National Emissions Standards for Hazardous Air Pollutants: Secondary Aluminum Production

AGENCY: Environmental Protection Agency.

ACTION: Supplemental notice of proposed rulemaking.

SUMMARY: This action supplements our notice of proposed rulemaking for the national emissions standards for hazardous air pollutants (NESHAP) for secondary aluminum production, which was published in the **Federal Register** on February 14, 2012. In that action, the Environmental Protection Agency (EPA) proposed decisions concerning the residual risk and technology review for the Secondary Aluminum Production source category and proposed amendments to correct and clarify rule requirements. This supplemental proposal presents a revised risk review (including a revised inhalation risk assessment, a refined multipathway risk assessment, and an updated ample margin of safety analysis) and a revised technology review for the Secondary Aluminum Production source category. Similar to the 2012 proposal, we found risks due to emissions of air toxics to be acceptable from this source category and we identified no cost effective controls under the updated ample margin of safety analysis or the technology review to achieve further emissions reductions. Therefore, we are proposing no revisions to the numeric emission standards based on these revised analyses. However, this supplemental proposal supplements and modifies several of the proposed technical corrections and rule clarifications that were originally presented in the February 14, 2012 proposal; withdraws our previous proposal to include affirmative defense provisions in the regulation; proposes alternative compliance options for the operating and monitoring requirements for sweat furnaces; and provides a revised cost analysis for compliance testing. This action, if finalized, would result in improved monitoring, compliance and implementation of the rule.

DATES: *Comments.* Comments must be received on or before January 22, 2015. A copy of comments on the information collection provisions should be submitted to the Office of Management and Budget (OMB) on or before January 7, 2015.

Public Hearing. If anyone contacts the EPA requesting a public hearing by December 15, 2014, the EPA will hold a public hearing on December 23, 2014 at the U.S. EPA building at 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. If you are interested in requesting a public hearing or attending the public hearing, contact Ms. Virginia Hunt at (919) 541–0832 or at *hunt.virginia@epa.gov.* If the EPA holds a public hearing, the EPA will keep the record of the hearing open for 30 days after completion of the hearing to provide an opportunity for submission of rebuttal and supplementary information.

ADDRESSES: *Comments.* Submit your comments, identified by Docket ID No. EPA–HQ–OAR–2010–0544, by one of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the online instructions for submitting comments.
- *Email: A-and-R-docket@epa.gov.* Include Attention Docket ID No. EPA–HQ–OAR–2010–0544 in the subject line of the message.
- *Fax:* (202) 566–9744, Attention Docket ID No. EPA–HQ–OAR–2010–0544.
- *Mail:* Environmental Protection Agency, EPA Docket Center (EPA/DC), Mail Code 28221T, Attention Docket ID No. EPA–HQ–OAR–2010–0544, 1200 Pennsylvania Avenue NW., Washington, DC 20460. Please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th Street NW., Washington, DC 20503.
- *Hand/Courier Delivery:* EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue NW., Washington, DC 20004, Attention Docket ID No. EPA–HQ–OAR–2010–0544. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–HQ–OAR–2010–0544. 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 *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov* or email. The *http://www.regulations.gov* Web site is an ''anonymous access'' system, 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 *http://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 disk or CD–ROM 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 *http://www.epa.gov/dockets.*

Docket: The EPA has established a docket for this rulemaking under Docket ID No. EPA–HQ–OAR–2010–0544. All documents in the docket are listed in the *www.regulations.gov* index. Although listed in the index, some information is not publicly available, *e.g.,* 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. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

Public Hearing: If anyone contacts the EPA requesting a public hearing by December 15, 2014, the public hearing will be held on December 23, 2014 at the EPA's campus at 109 T.W. Alexander Drive, Research Triangle Park, North Carolina. The hearing will begin at 1:00 p.m. (Eastern Standard Time) and conclude at 5:00 p.m. (Eastern Standard Time). Please contact

Ms. Virginia Hunt at 919–541–0832 or at *hunt.virginia@epa.gov* to register to speak at the hearing or to inquire as to whether or not a hearing will be held. The last day to pre-register in advance to speak at the hearing will be December 22, 2014. Additionally, requests to speak will be taken the day of the hearing at the hearing registration desk, although preferences on speaking times may not be able to be accommodated. If you require the service of a translator or special accommodations such as audio description, please let us know at the time of registration. If you require an accommodation, we ask that you pre-register for the hearing, as we may not be able to arrange such accommodations without advance notice.

If no one contacts the EPA requesting a public hearing to be held concerning this proposed rule by December 15, 2014, a public hearing will not take place. If a hearing is held, it will provide interested parties the opportunity to present data, views or arguments concerning the supplemental notice of proposed rulemaking. The EPA will make every effort to accommodate all speakers who arrive and register. Because the hearing will be held at a U.S. government facility, individuals planning to attend the hearing should be prepared to show valid picture identification to the security staff in order to gain access to the meeting room. Please note that the REAL ID Act, passed by Congress in 2005, established new requirements for entering federal facilities. If your driver's license is issued by Alaska, American Samoa, Arizona, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Montana, New York, Oklahoma or the state of Washington, you must present an additional form of identification to enter the federal building. Acceptable alternative forms of identification include: Federal employee badges, passports, enhanced driver's licenses and military identification cards. In addition, you will need to obtain a property pass for any personal belongings you bring with you. Upon leaving the building, you will be required to return this property pass to the security desk. No large signs will be allowed in the building, cameras may only be used outside of the building and demonstrations will not be allowed on federal property for security reasons.

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 comments and supporting information presented at the public hearing. Commenters should notify Ms. Hunt if they will need specific equipment, or if there are other special needs related to providing comments at the hearings. Verbatim transcripts of the hearing and written statements will be included in the docket for the rulemaking. 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 hearing to run either ahead of schedule or behind schedule. Again, a hearing will not be held unless requested. Please contact Ms. Virginia Hunt at (919) 541–0832 or at *hunt.virginia@epa.gov* to request or register to speak at the hearing or to inquire as to whether or not a hearing will be held.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Ms. Rochelle Boyd, 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 (919) 541–1390; fax number: (919) 541–3207; and email address: *boyd.rochelle@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, NC 27711; telephone number: (919) 541–0881; fax number: (919) 541–0840; and email address: *hirtz.james@epa.gov*. For information about the applicability of the NESHAP to a particular entity, contact Scott Throwe, Office of Enforcement and Compliance Assurance (OECA), telephone number (202) 564–7013; and email address: *throwe.scott@epa.gov*.

SUPPLEMENTARY INFORMATION:

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:

ACGIH	American Conference of Government Industrial Hygienists
AEGL	acute exposure guideline levels
AERMOD	air dispersion model used by the HEM–3 model
AMOS	ample margin of safety
ATSDR	Agency for Toxic Substances and Disease Registry
BACT	best available control technology
CAA	Clean Air Act
CalEPA	California Environmental Protection Agency
CBI	confidential business information
CFR	Code of Federal Regulations
D/F	dioxins and furans
EJ	environmental justice
EPA	United States Environmental Protection Agency
ERPG	Emergency Response Planning Guidelines
ERT	Electronic Reporting Tool
HAP	hazardous air pollutants
HCl	hydrogen chloride
HEM–3	Human Exposure Model, Version 3
HF	hydrogen fluoride
HI	hazard index
HQ	hazard quotient
ICR	information collection request
IRIS	Integrated Risk Information System
km	kilometer
lb/yr	pounds per year
LOAEL	lowest-observed-adverse-effect level
MACT	maximum achievable control technology
mg/m^3	milligrams per cubic meter
MIR	maximum individual risk
NAAQS	National Ambient Air Quality Standard
NAICS	North American Industry Classification System
NAS	National Academy of Sciences
NATA	National Air Toxics Assessment
NEI	National Emissions Inventory
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NOAEL	no observed adverse effects level
NRC	National Research Council
NTTAA	National Technology Transfer and Advancement Act
O&M	operation and maintenance
OAQPS	Office of Air Quality Planning and Standards
OECA	Office of Enforcement and Compliance Assurance
OMB	Office of Management and Budget
OM&M	operation, maintenance and monitoring
PAH	polycyclic aromatic hydrocarbons
PB–HAP	hazardous air pollutants known to be persistent and bio-accumulative in the environment
PEL	probable effect levels
PM	particulate matter
POM	polycyclic organic matter
REL	reference exposure level
RFA	Regulatory Flexibility Act
RfC	reference concentration
RfD	reference dose
RTR	residual risk and technology review
SAB	Science Advisory Board
SAPU	secondary aluminum processing unit
SBA	Small Business Administration
SOP	standard operating procedures
SSM	startup, shutdown, and malfunction
TEQ	toxic equivalents
THC	total hydrocarbons
TOSHI	target organ-specific hazard index
tpy	tons per year
TRIM.FaTE	Total Risk Integrated Methodology Fate, Transport and Ecological Exposure model
TTN	Technology Transfer Network
UBC	used beverage containers
UF	uncertainty factor
$\mu g/m^3$	microgram per cubic meter
UMRA	Unfunded Mandates Reform Act
URE	unit risk estimate
WHO	World Health Organization

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

I. General Information

A. Does this action apply to me?

The regulated industrial source category that is the subject of this supplemental proposal is listed in Table 1 of this preamble. Table 1 of this preamble is not intended to be exhaustive, but rather provides a guide for readers regarding the entities likely to be affected by this proposed action. These standards, once finalized, will be directly applicable to affected sources. Federal, state, local and tribal government entities are not affected by this proposed action. To determine whether your facility would be affected, you should examine the applicability criteria in the NESHAP. The Secondary Aluminum Production source category includes any facility using clean charge, aluminum scrap or dross from aluminum production, as the raw material and performing one or more of the following processes: scrap shredding, scrap drying/delacquering/decoating, thermal chip drying, furnace operations (*i.e.,* melting, holding, sweating, refining, fluxing or alloying), recovery of aluminum from dross, in-line fluxing or dross cooling.

TABLE 1—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS PROPOSED ACTION

Industrial source category	NESHAP	NAICS Code [a]
Secondary Aluminum Production	Secondary Aluminum Production	331314
Primary Aluminum Production Facilities		331312
Aluminum Sheet, Plate, and Foil Manufacturing Facilities		331315
Aluminum Extruded Product Manufacturing Facilities		331316
Other Aluminum Rolling and Drawing Facilities		331319
Aluminum Die Casting Facilities		331521
Aluminum Foundry Facilities		331524

[a] North American Industry Classification System.

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 through EPA's Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this supplemental proposal at: *http://www.epa.gov/ttn/atw/alum2nd/alum2pg.html.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the proposal and key technical documents at this same Web site. Information on the overall residual risk and technology review program is available at the following Web site: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.*

C. What should I consider as I prepare my comments for the EPA?

Submitting CBI. Do not submit information containing CBI to the EPA through *http://www.regulations.gov* or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information on a disk or CD–ROM that you mail to the EPA, mark the outside of the disk or CD–ROM as CBI and then identify electronically within the disk or CD–ROM 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 for inclusion in the public docket. If you submit a CD–ROM or disk that does not contain CBI, mark the outside of the disk or CD–ROM 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: Roberto Morales, 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–2010–0544.

II. Background Information

A. What is the statutory authority for this action?

Section 112 of the Clean Air Act (CAA) establishes a two-stage regulatory process to address emissions of hazardous air pollutants (HAP) from stationary sources. In the first stage, after the EPA has identified categories of sources emitting one or more of the HAP listed in CAA section 112(b), CAA section 112(d) requires us to promulgate technology-based NESHAP for those sources. ‘‘Major sources’’ are those that emit or have the potential to emit 10 tons per year (tpy) or more of a single HAP or 25 tpy or more of any combination of HAP. For major sources, 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) and are commonly referred to as maximum achievable control technology (MACT) standards.

MACT standards must reflect the maximum degree of emission reduction achievable through the application of measures, processes, methods, systems or techniques, including, but not limited to, measures that (1) reduce the volume of or eliminate pollutants through process changes, substitution of materials or other modifications; (2) enclose systems or processes to eliminate emissions; (3) capture or treat pollutants when released from a process, stack, storage or fugitive emissions point; (4) are design, equipment, work practice or operational standards (including requirements for operator training or certification); or (5) are a combination of the above. CAA section 112(d)(2)(A) through (E). The MACT standards may take the form of design, equipment, work practice or operational standards where the EPA first determines either that (1) a pollutant cannot be emitted through a conveyance designed and constructed to emit or capture the pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with law; or (2) the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations. CAA section 112(h)(1) and (2).

The MACT ‘‘floor’’ is the minimum control level allowed for MACT standards promulgated under CAA section 112(d)(3) and may not be based on cost considerations. For new sources, the MACT floor cannot be less stringent than the emissions control that is achieved in practice by the best-controlled similar source. The MACT floor for existing sources can be less stringent than floors for new sources but not less stringent than the average emissions limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT standards, the EPA must also consider control options that are more stringent than the floor. We may establish standards more stringent than the floor based on considerations of the cost of achieving the emission reductions, any non-air quality health and environmental impacts and energy requirements.

The EPA is then required to review these technology-based standards and revise them ‘‘as necessary (taking into account developments in practices, processes, and control technologies)’’ no less frequently than every eight years. CAA section 112(d)(6). In conducting this 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 second stage in standard-setting focuses on reducing any remaining (*i.e.,* ‘‘residual’’) risk according to CAA section 112(f). Section 112(f)(1) required that the EPA prepare a report to Congress discussing (among other things) methods of calculating the risks posed (or potentially posed) by sources after implementation of the MACT standards, the public health significance of those risks and the EPA's recommendations as to legislation regarding such remaining risk. The EPA prepared and submitted the *Residual Risk Report to Congress,* EPA–453/R–99–001 (*Risk Report*) in March 1999. CAA section 112(f)(2) then provides that if Congress does not act on any recommendation in the *Risk Report,* the EPA must analyze and address residual risk for each category or subcategory of sources 8 years after promulgation of such standards pursuant to CAA section 112(d).

Section 112(f)(2) of the CAA requires the EPA to determine for source categories subject to MACT standards whether the emission standards provide an ample margin of safety to protect public health. Section 112(f)(2)(B) of the CAA expressly preserves the EPA's use of the two-step process 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 *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 in a challenge to the risk review for the Synthetic Organic Chemical Manufacturing source category, the United States Court of Appeals for the District of Columbia Circuit upheld as reasonable the EPA's interpretation that subsection 112(f)(2) incorporates the approach established in the Benzene NESHAP. See *NRDC* v. *EPA,* 529 F.3d 1077, 1083 (D.C. Cir. 2008)(‘‘[S]ubsection 112(f)(2)(B) expressly incorporates the EPA's interpretation of the Clean Air Act from the Benzene standard, complete with a citation to the **Federal Register**.''); see also *A Legislative History of the Clean Air Act Amendments of 1990,* vol. 1, p. 877 (Senate debate on Conference Report).

The first step in the process of evaluating residual risk is the determination of acceptable risk. If risks are unacceptable, the EPA cannot consider cost in identifying the emissions standards necessary to bring risks to an acceptable level. The second step is the determination of whether standards must be further revised in order to provide an ample margin of safety to protect public health. The ample margin of safety is the level at which the standards must be set, unless an even more stringent standard is necessary to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect.

1. Step 1—Determination of Acceptability

The agency in the Benzene NESHAP concluded that ‘‘the acceptability of risk under section 112 is best judged on the basis of a broad set of health risk measures and information’’ and that the ‘‘judgment on acceptability cannot be reduced to any single factor.’’ *Benzene*

NESHAP at 38046. The determination of what represents an ''acceptable'' risk is based on a judgment of ''what risks are acceptable in the world in which we live'' (*Risk Report* at 178, quoting *NRDC* v. *EPA,* 824 F. 2d 1146, 1165 (D.C. Cir. 1987) (en banc) (''Vinyl Chloride''), recognizing that our world is not risk-free.

In the Benzene NESHAP, we stated that ''EPA will generally presume that if the risk to [the maximum exposed] individual is no higher than approximately one in 10 thousand, that risk level is considered acceptable.'' 54 FR at 38045. We discussed the maximum individual lifetime cancer risk (or maximum individual risk (MIR)) as being ''the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years.'' *Id.* We explained that this measure of risk ''is an estimate of the upper bound of risk based on conservative assumptions, such as continuous exposure for 24 hours per day for 70 years.'' *Id.* We explained that this measure of risk ''is an estimate of the upper bound of risk based on conservative assumptions, such as continuous exposure for 24 hours per day for 70 years.'' *Id.* We acknowledged that maximum individual lifetime cancer risk ''does not necessarily reflect the true risk, but displays a conservative risk level which is an upper-bound that is unlikely to be exceeded.'' *Id.*

Understanding that there are both benefits and limitations to using the MIR as a metric for determining acceptability, we acknowledged in the Benzene NESHAP that ''consideration of maximum individual risk . . . must take into account the strengths and weaknesses of this measure of risk.'' *Id.* Consequently, the presumptive risk level of 100-in-1 million (1-in-10 thousand) provides a benchmark for judging the acceptability of maximum individual lifetime cancer risk, but does not constitute a rigid line for making that determination. Further, in the Benzene NESHAP, we noted that:

> ''[p]articular attention will also be accorded to the weight of evidence presented in the risk assessment of potential carcinogenicity or other health effects of a pollutant. While the same numerical risk may be estimated for an exposure to a pollutant judged to be a known human carcinogen, and to a pollutant considered a possible human carcinogen based on limited animal test data, the same weight cannot be accorded to both estimates. In considering the potential public health effects of the two pollutants, the Agency's judgment on acceptability, including the MIR, will be influenced by the greater weight of evidence for the known human carcinogen.''

Id. at 38046. The agency also explained in the Benzene NESHAP that:

> ''[i]n establishing a presumption for MIR, rather than a rigid line for acceptability, the Agency intends to weigh it with a series of other health measures and factors. These include the overall incidence of cancer or other serious health effects within the exposed population, the numbers of persons exposed within each individual lifetime risk range and associated incidence within, typically, a 50 km exposure radius around facilities, the science policy assumptions and estimation uncertainties associated with the risk measures, weight of the scientific evidence for human health effects, other quantified or unquantified health effects, effects due to co-location of facilities, and co-emission of pollutants.''

Id. at 38045. In some cases, these health measures and factors taken together may provide a more realistic description of the magnitude of risk in the exposed population than that provided by maximum individual lifetime cancer risk alone.

As noted earlier, in *NRDC* v. *EPA,* the court held that section 112(f)(2) ''incorporates the EPA's interpretation of the Clean Air Act from the Benzene Standard.'' The court further held that Congress' incorporation of the Benzene standard applies equally to carcinogens and non-carcinogens. 529 F.3d at 1081–82. Accordingly, we also consider non-cancer risk metrics in our determination of risk acceptability and ample margin of safety.

2. Step 2—Determination of Ample Margin of Safety

CAA section 112(f)(2) requires the EPA to determine, for source categories subject to MACT standards, whether those standards provide an ample margin of safety to protect public health. As explained in the Benzene NESHAP, ''the second step of the inquiry, determining an 'ample margin of safety,' again includes consideration of all of the health factors, and whether to reduce the risks even further. . . . Beyond that information, additional factors relating to the appropriate level of control will also be considered, including costs and economic impacts of controls, technological feasibility, uncertainties and any other relevant factors. Considering all of these factors, the agency will establish the standard at a level that provides an ample margin of safety to protect the public health, as required by section 112.'' 54 FR at 38046, September 14, 1989.

According to CAA section 112(f)(2)(A), if the MACT standards for HAP ''classified as a known, probable, or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million,'' the EPA must promulgate residual risk standards for the source category (or subcategory), as necessary to provide an ample margin of safety to protect public health. In doing so, the EPA may adopt standards equal to existing MACT standards if the EPA determines that the existing standards (*i.e.,* the MACT standards) are sufficiently protective. *NRDC* v. *EPA,* 529 F.3d 1077, 1083 (D.C. Cir. 2008) (''If EPA determines that the existing technology-based standards provide an 'ample margin of safety,' then the Agency is free to readopt those standards during the residual risk rulemaking.'') The EPA must also adopt more stringent standards, if necessary, to prevent an adverse environmental effect,[1] but must consider cost, energy, safety and other relevant factors in doing so.

The CAA does not specifically define the terms ''individual most exposed,'' ''acceptable level'' and ''ample margin of safety.'' In the Benzene NESHAP, 54 FR at 38044–38045, September 14, 1989, we stated as an overall objective:

> In protecting public health with an ample margin of safety under section 112, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1-in-1 million and (2) limiting to no higher than approximately 1-in-10 thousand [*i.e.,* 100-in-1 million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years.

The agency further stated that ''[t]he EPA also considers incidence (the number of persons estimated to suffer cancer or other serious health effects as a result of exposure to a pollutant) to be an important measure of the health risk to the exposed population. Incidence measures the extent of health risks to the exposed population as a whole, by providing an estimate of the occurrence of cancer or other serious health effects in the exposed population.'' *Id.* at 38045.

In the ample margin of safety decision process, the agency again considers all of the health risks and other health information considered in the first step, including the incremental risk reduction

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[1] ''Adverse environmental effect'' is defined as any significant and widespread adverse effect, which may be reasonably anticipated to wildlife, aquatic life or natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental qualities over broad areas. CAA section 112(a)(7).

associated with standards more stringent than the MACT standard or a more stringent standard that the EPA has determined is necessary to ensure risk is acceptable. In the ample margin of safety analysis, the agency considers additional factors, including costs and economic impacts of controls, technological feasibility, uncertainties and any other relevant factors. Considering all of these factors, the agency will establish the standard at a level that provides an ample margin of safety to protect the public health, as required by CAA section 112(f). 54 FR 38046, September 14, 1989.

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

The Secondary Aluminum Production source category includes facilities that produce aluminum from scrap aluminum material and consists of the following operations: (1) Preprocessing of scrap aluminum, including size reduction and removal of oils, coatings and other contaminants; (2) furnace operations, including melting, in-furnace refining, fluxing and tapping; (3) additional refining, by means of in-line fluxing; and (4) cooling of dross. The following sections include descriptions of the affected sources in the Secondary Aluminum Production source category, the origin of HAP emissions from these affected sources and factors affecting the emissions.

Scrap aluminum is often preprocessed prior to melting. Preprocessing steps may include shredding to reduce the size of aluminum scrap; drying of oily scrap such as machine turnings and borings; and/or heating in a scrap dryer, delacquering kiln or decoating kiln to remove coatings or other contaminants that may be present on the scrap. Heating of high iron content scrap in a sweat furnace to reclaim the aluminum content is also a preprocessing operation.

Crushing, shredding and grinding operations are used to reduce the size of scrap aluminum. Particulate matter (PM) and HAP metals emissions are generated as dust from coatings and other contaminants contained in the scrap aluminum.

A chip dryer is used to evaporate oil and/or moisture from uncoated aluminum chips and borings. Chip dryers typically operate at temperatures ranging between 150 °C to 400 °C (300 °F to 750 °F). An uncontrolled chip dryer may emit dioxins and furans (D/F) and total hydrocarbons (THC), of which some fraction is organic HAP.

Painted and/or coated materials are processed in a scrap dryer/delacquering kiln/decoating kiln to remove coatings and other contaminants that may be present in the scrap prior to melting. Coatings, oils, grease and lubricants represent up to 20 percent of the total weight of these materials. Organic HAP, D/F and inorganic HAP including particulate metal HAP are emitted during the drying/delacquering/decoating process.

Used beverage containers (UBC) comprise a major portion of the recycled aluminum scrap used as feedstock by the industry. In scrap drying/delacquering/decoating operations, UBC and other post-consumer coated products (*e.g.,* aluminum siding) are heated to an exit temperature of up to 540 °C (1,000 °F) to volatilize and remove various organic contaminants such as paints, oils, lacquers, rubber and plastic laminates prior to melting. An uncontrolled scrap dryer/delacquering kiln/decoating kiln emits PM (of which some fraction is particulate metal HAP), hydrogen chloride (HCl), THC (of which some fraction is organic HAP) and D/F.

A sweat furnace is typically used to reclaim (or ''sweat'') the aluminum from scrap with high levels of iron. These furnaces operate in batch mode at a temperature that is high enough to melt the aluminum, but not high enough to melt the iron. The aluminum melts and flows out of the furnace while the iron remains in the furnace in solid form. The molten aluminum can be cast into sows, ingots or T-bars that are used as feedstock for aluminum melting and refining furnaces. Alternately, molten aluminum can be fed directly to a melting or refining furnace. An uncontrolled sweat furnace may emit D/F.

Process (*i.e.,* melting, holding or refining) furnaces are refractory-lined metal vessels heated by an oil or gas burner to achieve a metal temperature of about 760 °C (1,400 °F). The melting process begins with the charging of scrap into the furnace. A gaseous (typically, chlorine) or salt flux may be added to remove impurities and reduce aluminum oxidation. Once molten, the chemistry of the bath is adjusted by adding selected scrap or alloying agents, such as silicon. Salt and other fluxes contain chloride and fluoride compounds that may be released when introduced to the bath. HCl may also be released when chlorine-containing contaminants (such as polyvinyl chloride coatings) present in some types of scrap are introduced to the bath. Argon and nitrogen fluxes are not reactive and do not produce HAP. In a sidewell melting furnace, fluxing is performed in the sidewell, and fluxing emissions from the sidewell are controlled. In this type of furnace, fluxing is not typically done in the hearth, and hearth emissions (which include products of combustion from the oil and gas-fired furnaces) are typically uncontrolled.

Process furnaces may process contaminated scrap which can result in HAP emissions. In addition, fluxing agents may contain compounds capable of producing HAP, some fraction of which is emitted from the furnace. Process furnaces are significant sources of HAP emissions in the secondary aluminum industry. An uncontrolled melting furnace which processes contaminated scrap and uses reactive fluxes emits PM (of which some fraction is particulate metal HAP), HCl and D/F.

Process furnaces are divided into group 1 and group 2 furnaces. Group 1 furnaces are unrestricted in the type of scrap they process and the type of fluxes they can use. Group 2 furnaces process only clean charge and conduct no reactive fluxing.

Dross-only furnaces are furnaces dedicated to reclamation of aluminum from drosses formed during the melting/holding/alloying operations carried out in other furnaces. Exposure to the atmosphere causes the molten aluminum to oxidize, and the flotation of the impurities to the surface along with any salt flux creates ''dross.'' Prior to tapping, the dross is periodically skimmed from the surface of the aluminum bath and cooled. Dross-only furnaces are typically rotary barrel furnaces (also known as salt furnaces). A dross-only furnace emits PM (of which some fraction is particulate metal HAP).

Rotary dross coolers are devices used to cool dross in a rotating, water-cooled drum. A rotary dross cooler emits PM (of which some fraction is particulate metal HAP).

In-line fluxers are devices used for aluminum refining, including degassing, outside the furnace. The process involves the injection of chlorine, argon, nitrogen or other gases to achieve the desired metal purity. In-line fluxers are found primarily at facilities that manufacture very high quality aluminum or in facilities with no other means of degassing. An in-line fluxer operating without emission controls emits HCl and PM.

A summary description of requirements in the existing subpart RRR NESHAP is provided below for the convenience of the reader. The inclusion of this description, however, does not reopen the existing rule requirements and we are neither reconsidering nor soliciting public comment on the requirements described. In addition, this summary description should not be relied on to determine applicability of the regulatory provisions or compliance obligations. The proposed decisions and rule amendments addressed in section IV below are the only provisions on which we are taking comment.

The NESHAP for the Secondary Aluminum Production source category were promulgated on March 23, 2000 (65 FR 15690) and codified at 40 CFR part 63, subpart RRR (referred to from here on as subpart RRR in the remainder of this document). The rule was amended at 67 FR 79808, December 30, 2002; 69 FR 53980, September 3, 2004; 70 FR 57513, October 3, 2005 and 70 FR 75320, December 19, 2005. The existing subpart RRR NESHAP regulates HAP emissions from secondary aluminum production facilities that are major sources of HAP that operate aluminum scrap shredders, thermal chip dryers, scrap dryers/delacquering kilns/decoating kilns, group 1 furnaces, group 2 furnaces, sweat furnaces, dross-only furnaces, rotary dross coolers and secondary aluminum processing units (SAPUs). The SAPUs include group 1 furnaces and in-line fluxers. The subpart RRR NESHAP regulates HAP emissions from secondary aluminum production facilities that are area sources of HAP only with respect to emissions of D/F from thermal chip dryers, scrap dryers/delacquering kilns/decoating kilns, group 1 furnaces, sweat furnaces and SAPUs.

The secondary aluminum industry consists of approximately 161 secondary aluminum production facilities, of which the EPA estimates 53 to be major sources of HAP. The HAP emitted by these facilities are metals, organic HAP, D/F, HCl and hydrogen fluoride (HF).

Several of the secondary aluminum facilities are co-located with primary aluminum, coil coating and possibly other source category facilities. Natural gas boilers or process heaters may also be co-located at a few secondary aluminum facilities.

The standards promulgated in 2000 established emission limits for PM as a surrogate for metal HAP, THC as a surrogate for organic HAP other than D/F, D/F expressed as toxic equivalents and HCl as a surrogate for acid gases including HF, chlorine and fluorine. HAP are emitted from the following affected sources: Aluminum scrap shredders (subject to PM standards), thermal chip dryers (subject to standards for THC and D/F), scrap dryers/delacquering kilns/decoating kilns (subject to standards for PM, D/F, HCl and THC), sweat furnaces (subject to D/F standards), dross-only furnaces (subject to PM standards), rotary dross coolers (subject to PM standards), group 1 furnaces (subject to standards for PM, HCl and D/F) and in-line fluxers (subject to standards for PM and HCl). Group 2 furnaces and certain in-line fluxers are subject to work practice standards. Table 2 provides a summary of the current MACT emissions limits for existing and new sources under the subpart RRR NESHAP.

Table 2. Emission Standards for New and Existing Affected Sources for the Secondary Aluminum Source Category[2]

Affected source/ Emission unit	Pollutant	Limit	Units
All new and existing affected sources and emission units that are controlled with a PM add-on control device and that choose to monitor with a Continuous Opacity Monitor (COM) and all new and existing aluminum scrap shredders that choose to monitor with a COM or to monitor visible emissions	Opacity	10	percent
New and existing aluminum scrap shredder	PM	0.01	gr/dscf
New and existing thermal chip dryer	THC D/F[a]	0.80 2.50	lb/ton of feed µg TEQ/Mg of feed
New and existing scrap dryer/delacquering kiln/decoating kiln	PM HCl THC D/F[a]	0.08 0.80 0.06 0.25	lb/ton of feed lb/ton of feed lb/ton of feed µg TEQ/Mg of feed
Or			
Alternative limits if afterburner has a design residence time of at least 1 second and operates at a temperature of at least 1,400°F	PM HCl THC D/F[a]	0.30 1.50 0.20 5.0	lb/ton of feed lb/ton of feed lb/ton of feed µg TEQ/Mg of feed
New and existing sweat furnace	D/F[a]	0.80	ng TEQ/dscm @ 11% O_2[b]
New and existing dross-only furnace	PM	0.30	lb/ton of feed
New and existing in-line fluxer[c]	HCl PM	0.04 0.01	lb/ton of feed lb/ton of feed
New and existing in-line fluxer with no reactive fluxing		No limit	Work practice: no reactive fluxing
New and existing rotary dross cooler	PM	0.04	gr/dscf

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[2] 40 CFR Part 63, Subpart RRR, Table 1.

New and existing clean furnace (Group 2)		No limit	Work practices: clean charge only and no reactive fluxing
New and existing group 1 melting/holding furnace (processing only clean charge)[c]	PM	0.80	lb/ton of feed
	HCl	0.40	lb/ton of feed
		or	
		10	percent of the HCl upstream of an add-on control device
New and existing group 1 furnace[c]	PM	0.40	lb/ton of feed
	HCl	0.40	lb/ton of feed
		or	
		10	Percent of the HCl upstream of an add-on control device
	D/F[a]	15.0	µg TEQ/Mg of feed
New and existing group 1 furnace[c] with clean charge only	PM	0.40	lb/ton of feed
	HCl	0.40	lb/ton of feed
		or	
		10	percent of the HCl upstream of an add-on control device
	D/F[a]	No Limit	Clean charge only
New and existing secondary aluminum processing unit[a,d] (consists of all existing group 1 furnaces and existing in-line flux boxes at the facility, or all simultaneously constructed new group 1 furnaces and new in-line fluxers)	PM[e]	$L_{t_{PM}} = \frac{\sum_{i=1}^{n} \left(L_{i_{PM}} \times T_i \right)}{\sum_{i=1}^{n} \left(T_i \right)}$	
	HCl[f]	$L_{t_{HCl}} = \frac{\sum_{i=1}^{n} \left(L_{i_{HCl}} \times T_i \right)}{\sum_{i=1}^{n} \left(T_i \right)}$	

D/F[g]	$L_{t_{D/F}} = \dfrac{\sum_{i=1}^{n} \left(L_{i_{D/F}} \times T_i \right)}{\sum_{i=1}^{n} \left(T_i \right)}$

[a] D/F limit applies to a unit at a major or area source.

[b] Sweat furnaces equipped with afterburners meeting the specifications of §63.1505(f)(1) are not required to conduct a performance test.

[c] These limits are also used to calculate the limits applicable to secondary aluminum processing units.

[d] Equation definitions: L_{iPM} = the PM emission limit for individual emission unit i in the secondary aluminum processing unit [kg/Mg (lb/ton) of feed]; T_i = the feed rate for individual emission unit i in the secondary aluminum processing unit; L_{tPM} = the overall PM emission limit for the secondary aluminum processing unit [kg/Mg (lb-ton) of feed]; L_{iHCl} = the HCl emission limit for individual emission unit i in the secondary aluminum processing unit [kg/Mg (lb/ton) of feed]; L_{tHCl} = the overall HCl emission limit for the secondary aluminum processing unit [kg/Mg (lb/ton) of feed]; $L_{iD/F}$ = the D/F emission limit for individual emission unit i [µg toxic equivalents (TEQ)/Mg (gr TEQ/ton) of feed]; $L_{tD/F}$ = the overall D/F emission limit for the secondary aluminum processing unit [µg TEQ/Mg (gr TEQ/ton) of feed]; n = the number of units in the secondary aluminum processing unit.

[e] In-line fluxers using no reactive flux materials cannot be included in this calculation since they are not subject to the PM limit.

[f] In-line fluxers using no reactive flux materials cannot be included in this calculation since they are not subject to the HCl limit.

[g] Clean charge furnaces cannot be included in this calculation since they are not subject to the D/F limit.

Control devices currently in use to reduce emissions from affected sources subject to the subpart RRR NESHAP include fabric filters for control of PM from aluminum scrap shredders; afterburners for control of THC and D/F from thermal chip dryers; afterburners plus lime-injected fabric filters for control of PM, HCl, THC and D/F from scrap dryers/delacquering kilns/decoating kilns; afterburners for control of D/F from sweat furnaces; fabric filters for control of PM from dross-only furnaces and rotary dross coolers; lime-injected fabric filters for control of PM and HCl from in-line fluxers; and lime-injected fabric filters for control of PM, HCl and D/F from group 1 furnaces. All affected sources with add-on controls are also subject to design requirements and operating limits to limit fugitive emissions.

Compliance with the emission limits in the current rule is demonstrated by an initial performance test for each affected source. Repeat performance tests are required every 5 years. Area sources are only subject to one-time performance tests for D/F. After the compliance tests, facilities are required to monitor various control parameters or conduct other types of monitoring to ensure continuous compliance with the MACT standards. Owners or operators of sweat furnaces that operate an afterburner that meets temperature and residence time requirements are not required to conduct performance tests.

C. What is the history of the Secondary Aluminum Risk and Technology Review?

On February 14, 2012 (77 FR 8576), we proposed that no amendments to subpart RRR were necessary as a result of the residual risk and technology review (RTR) conducted for the Secondary Aluminum Production source category. In the same notice (77 FR 8576, which is referred to as the 2012 proposal in the remainder of this **Federal Register** document), we proposed amendments to correct and clarify existing requirements in subpart RRR. In this supplemental proposal, we are soliciting comment on modified proposed amendments to the subpart RRR rule requirements and on alternative compliance options related to sweat furnaces. The proposed revisions and alternative compliance options, described in more detail later in this document, on which we are soliciting comment are:

- Revised proposed limit on number of allowed furnace operating mode changes per year (*i.e.,* frequency) in proposed section 63.1514(e) of four times in any 6-month period, with the ability of sources to apply to the appropriate authority for additional furnace operating mode changes;
- Revised wording in proposed section 63.1511(b)(1) related to testing under worst-case scenario clarifying under what conditions the performance tests are to be conducted;
- Revised proposed requirements to account for fugitive emissions during performance testing of uncontrolled furnaces, including: (1) Installation of hooding according to American Conference of Government Industrial Hygienists (ACGIH) guidelines; (2) application of an assumption of 67 percent capture/control efficiency when calculating emissions; or (3) in certain cases where installing ACGIH hooding is impractical, allowing the facility to petition the permitting authority for major sources or the Administrator for area sources, for approval to use alternative testing procedures that will minimize fugitive emissions;
- Revised proposed requirement that emission sources comply with the emissions limits at all times including periods of startup and shutdown. Definitions of startup and shutdown are

being proposed as well as an alternative method for demonstrating compliance with emission limits;

- Revised proposed monitoring requirements in section 63.1510(d)(2) that require annual inspection of capture/collection systems;
- Revised proposed compliance dates of 180 days for certain requirements and 2 years for other requirements; and
- Revised operating and monitoring requirements for demonstrating compliance for sweat furnaces.

In addition, we are withdrawing our 2012 proposal to include provisions establishing an affirmative defense in light of a recent court decision vacating an affirmative defense in one of the EPA's section 112(d) regulations. *NRDC* v. *EPA,* 749 F.3d 1055 (D.C. Cir. 2014) (vacating affirmative defense provisions in Section 112(d) rule establishing emission standards for Portland cement kilns).

After reviewing the comments, data and other information received after the 2012 proposal, we determined it is appropriate to present certain revised analyses and revised proposed amendments in this supplemental proposal to allow the public an opportunity to review and comment on these revised analyses and revised proposed amendments.

The 2012 proposal also contained other proposed requirements (topics listed below) for which we have not made any changes to the analyses, and, therefore, on which we are not seeking public comment in this document. Other amendments or requirements that we proposed in 2012, which we are not re-opening for comment, are the following:

- Electronic reporting.
- ACGIH Guidelines.
- Lime injection rate.
- Flux monitoring.
- Cover flux.
- Bale breakers.
- Bag Leak Detection Systems (BLDS).
- Sidewell furnaces.
- Testing representative units.
- Initial performance tests.
- Scrap dryer/delacquering/decoating kiln definition.
- Group 2 furnace definition.
- HF emissions compliance.
- SAPU definition.
- Clean charge definition.
- Residence time definition.
- SAPU feed/charge rate.
- Dross-only versus dross/scrap furnaces.
- Applicability of rule to area sources.
- Altering parameters during testing with new scrap streams.
- Controlled furnaces that are temporarily idled for 24 hours or longer.
- Annual compliance certification for area sources.

The comment period for the February 2012 proposal ended on April 13, 2012. We will address the comments we received during the public comment period for the 2012 proposal, as well as comments received during the comment period for this supplemental proposal, at the time we take final action.

Subpart RRR inadvertently uses several different terms for the agency that has primary responsibility for implementation of certain subpart RRR provisions. The terms used include ''responsible permitting authority,'' ''permitting authority,'' ''applicable permitting authority'' and ''delegated authority.'' Depending on the particular state and whether the facility is a major or area source, the permitting authority and the delegated authority for purposes of subpart RRR may be the same or may differ. Therefore, the EPA deems it appropriate to clarify for purposes of these specific subpart RRR provisions that the ''permitting authority'' (defined in the General Provisions as the Title V permitting authority) is the primary implementing authority for major sources, and the Administrator is the primary implementing authority for area sources. The General Provisions define ''Administrator'' to mean the EPA Administrator or his or her authorized representative (*e.g.,* a state that has been delegated authority to implement Subpart RRR).

Where these terms for the implementing authority appear in this supplemental proposal, we have made the necessary corrections. We plan to correct the remainder of these references when we issue the final rule.

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

For the risk analysis performed for the 2012 proposal, we compiled a dataset from two primary sources: (1) A nine-company testing information collection request (ICR) sent in May 2010, and (2) an all-company ICR sent to companies in February 2011. These data collection efforts are described in the 2012 proposal, and a comprehensive description of the emissions data, calculations and risk assessment inputs are in the memorandum, *Development of the RTR Risk Modeling Dataset for the Secondary Aluminum Production Source Category* (Docket item EPA–HQ–OAR–2010–0544–0149).

For the revised risk analysis conducted for this supplemental proposal, changes were made in the methodology used to calculate allowable emissions. Generally, allowable emissions were calculated for the 2012 proposal as the product of the emissions limit for the secondary aluminum emissions unit and the maximum production capacity of the unit. For the revised emissions modeling for this supplemental proposal, the amount of charge to the unit from the all-company ICR was used in the allowable emissions calculation, rather than the maximum production capacity of the unit. Uniformly assuming that every piece of equipment is being used at maximum capacity results in an overestimate of total aluminum throughput that is much larger than the actual throughput for the facility as a whole. Moreover, if we assume maximum production capacity coupled with the assumption that all HAP are being emitted at the highest level allowed by the MACT rule (*i.e.,* at the level of the emissions limit), this results in an overly conservative estimate of emissions. This overestimation is magnified for large facilities, with multiple pieces of equipment. Therefore, for this supplemental proposal, the amount of charge to the unit from the all-company ICR was used in the allowable emissions calculation, rather than the maximum production capacity of the unit. Furthermore, this revised methodology is consistent with EPA's risk assessment methodology performed in other RTR modeling projects. See National Emission Standards for Hazardous Air Pollutants: Primary Lead Smelting; proposed rule (76 FR 9410, February 17, 2011), National Emissions Standards for Hazardous Air Pollutants: Secondary Lead Smelting; proposed rule (76 FR 29032, May 19, 2011) and National Emissions Standards for Hazardous Air Pollutants: Ferroalloys Production (76 FR 72508, November 23, 2011). For an in-depth description of the revised risk modeling dataset, including changes in methodologies between the emissions modeling for the 2012 proposal and the emissions modeling for this supplemental proposal, see the memorandum, *Development of the RTR Supplemental Proposal Risk Modeling Dataset for the Secondary Aluminum Production Source Category,* available in this rulemaking docket.

As part of the revised risk analysis, process equipment and unit emissions data used in the emissions modeling for the 2012 proposal were also reviewed. Since cancer risks were driven by D/F emissions in the modeling done for the 2012 proposal, we focused our refined assessment on the D/F emissions data. The other modeled pollutants had considerably lower estimated risks (compared to D/F) and the estimated risks for all these HAP were well below the presumptive acceptable risk levels.

For almost all facilities, the D/F emissions reported in the 2011 ICR responses were used for the revised modeling. However, for the companies operating the 10 facilities that had the highest modeled risk from actual emissions in the modeling for the 2012 proposal, we requested and received results from additional compliance D/F testing that was conducted since the 2011 ICR. The results for all test runs associated with 2011 ICR responses and all test runs received as part of the request for additional test data were averaged together for each facility to provide more accurate estimates of the D/F emissions and resulting risks for these facilities. A memorandum comparing the 2011 emissions data with the revised emissions data used for this supplemental proposal and the reasons for differences is available in the docket for this rulemaking. See *Modeling Input Revisions for the RTR Risk Modeling Dataset for the Secondary Aluminum Production Source Category.*

We also revised emissions data for primary aluminum operations at primary aluminum facilities that were co-located at secondary aluminum facilities. The revised primary aluminum emissions data were based on recent test data used in the supplemental proposed rulemaking for the Primary Aluminum Production source category. These data included the following:

- Additional emission test data for polycyclic organic matter (POM) emissions from prebake potlines;
- Additional emission test data for PM emissions from prebake and Soderberg potlines, anode bake furnaces and paste plants;
- Additional emission test data for speciated polycyclic aromatic hydrocarbons (PAHs), speciated HAP metals, speciated polychlorinated biphenyls (PCBs) and speciated D/Fs from potlines, anode bake furnaces and paste plants.

III. Analytical Procedures

A. How did we evaluate the post-MACT risks posed by the Secondary Aluminum Production source category in the risk assessment developed for this supplemental proposal?

The EPA conducted a risk assessment that provides estimates of the MIR posed by the HAP emissions 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. The assessment also provides estimates of the distribution of cancer risks within the exposed populations, cancer incidence and an evaluation of the potential for adverse environmental effects. 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 used for this revised assessment: *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal.* The methods used to assess risks (as described in the seven primary steps below) are consistent with those peer-reviewed by a panel of the EPA's Science Advisory Board (SAB) in 2009 and described in their peer review report issued in 2010;[3] 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?

As explained in section II.D above, the revised RTR emissions dataset for the Secondary Aluminum Production source category constitutes the basis for the revised risk assessment. This includes recent test data received from the primary aluminum facilities that were co-located at secondary aluminum production facilities. We estimated the magnitude of emissions using emissions test data collected through ICRs along with more recent data submitted by companies with facilities identified as the highest risk facilities for D/F emissions in the 2012 risk analysis. We also reviewed the information regarding emissions release characteristics such as stack heights, stack gas exit velocities, stack temperatures and source locations. In addition to the data quality checks performed on the source data for the facilities contained in the dataset, we also verified the coordinates of every emission source in the dataset through visual observations using Google Earth. We also performed data quality checks on the emissions data and release characteristics. The revised emissions data, the data quality checks and the methods used to estimate emissions from all the various emissions sources, are described in more detail in the technical documents: *Development of the RTR Supplemental Proposal Risk Modeling Dataset for the Secondary Aluminum Production Source Category* and *Modeling Input Revisions for the RTR Risk Modeling Dataset for the Secondary Aluminum Production Source Category,* which are available in the docket for this action.

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 the specified annual time period. In some cases, these ''actual'' emission levels are lower than the emission levels required to comply with the MACT standards. The emissions level allowed to be emitted by the MACT standards is referred to as the ''MACT-allowable'' emissions level. We discussed the use of both MACT-allowable and actual emissions in the final Coke Oven Batteries residual risk rule (70 FR 19998–19999, April 15, 2005) and in the proposed and final Hazardous Organic NESHAP residual risk rules (71 FR 34428, June 14, 2006 and 71 FR 76609, December 21, 2006, respectively). In those previous actions, we noted that assessing the risks at the MACT-allowable level is inherently reasonable since these risks reflect 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, September 14, 1989).

For this supplemental proposal, we evaluated allowable stack emissions based on the level of control required by the subpart RRR MACT standards. As described in section II.D above, changes were made in the methodology used to calculate the allowable emissions for the revised risk analysis conducted for this supplemental proposal. In the 2012 proposal, allowable emissions were calculated using the emissions limits for the 67 secondary aluminum emissions units and the maximum production capacity of each unit. For the revised emissions modeling, the actual amount of charge to the unit from the all-company ICR was used in the allowable emissions calculation, rather than the maximum production capacity of the unit. The methodology used to calculate allowable emissions is explained in more detail in the technical documents: *Development of the RTR Supplemental Proposal Risk Modeling Dataset for the Secondary Aluminum Production*

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[3] U.S. EPA SAB. *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,* May 2010.

Source Category and *Modeling Input Revisions for the RTR Risk Modeling Dataset for the Secondary Aluminum Production Source Category,* which are available in the docket for this action.

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

Both long-term and short-term inhalation exposure concentrations and health risks from the source category addressed in this proposal were estimated using the Human Exposure Model (Community and Sector HEM–3 version 1.1.0). 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[4], and (3) estimating individual and population-level inhalation risks using the exposure estimates and quantitative dose-response information.

The air dispersion model used by the HEM–3 model (AERMOD) is one of the EPA's preferred models for assessing pollutant concentrations from industrial facilities.[5] 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 (2011) of hourly surface and upper air observations for more than 800 meteorological stations, selected to provide coverage of the United States and Puerto Rico. A second library of United States Census Bureau census block[6] internal point locations and populations provides the basis of human exposure calculations (U.S. Census, 2010). In addition, for each census block, the census library includes the elevation and controlling hill height, which are also used in dispersion calculations. A third library of pollutant unit risk factors and other health benchmarks is used to estimate health risks. These risk factors and health benchmarks are the latest values recommended by the EPA for HAP and other toxic air pollutants. These values are available at *http://www.epa.gov/ttn/atw/toxsource/summary.html* and are discussed in more detail later in this section.

In developing the risk assessment for chronic exposures, we used the estimated annual average ambient air concentrations of each HAP emitted by each major source and D/F emissions from each area source for which we have emissions data in the source category. The air concentrations at each nearby census block centroid were used as a surrogate for the chronic inhalation exposure concentration for all the people who reside in that census block. We calculated the MIR for each facility as the cancer risk associated with a continuous lifetime (24 hours per day, 7 days per week and 52 weeks per year for a 70-year period) exposure to the maximum concentration at the centroid of inhabited census blocks. Individual cancer risks were calculated by multiplying the estimated lifetime exposure to the ambient concentration of each of the 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 probability 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 URE values from the EPA's Integrated Risk Information System (IRIS). For carcinogenic pollutants without EPA IRIS values, we look to other reputable sources of cancer dose-response values, often using California EPA (CalEPA) URE values, where available. In cases where new, scientifically credible dose response values have been developed in a manner consistent with the EPA guidelines and have undergone a peer review process similar to that used by the EPA, we may use such dose-response values in place of, or in addition to, other values, if appropriate.

The EPA estimated incremental individual lifetime cancer risks associated with emissions from the facilities in the source category as the sum of the risks for each of the carcinogenic HAP (including those classified as carcinogenic to humans, likely to be carcinogenic to humans and suggestive evidence of carcinogenic potential[7]) emitted by the modeled sources. Cancer incidence and the distribution of individual cancer risks for the population within 50 km of the sources were also estimated for the source category as part of this assessment by summing individual risks. A distance of 50 km is consistent with both the analysis supporting the 1989 Benzene NESHAP (54 FR 38044, September 14, 1989) and the limitations of Gaussian dispersion models, including AERMOD.

To assess the risk of non-cancer health effects from chronic exposures, we summed the HQ for each of the HAP that affects a common target organ system to obtain the HI for that target organ system (or target organ-specific HI, TOSHI). The HQ is the estimated exposure divided by the chronic reference value, which is a value selected from one of several sources. First, the chronic reference level can be the EPA reference concentration (RfC) (*http://www.epa.gov/riskassessment/glossary.htm*), 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.'' Alternatively, in cases where an RfC from the EPA's IRIS database is not available or where the EPA determines that using a value other than the RfC is appropriate, the chronic reference level can be a value from the following prioritized sources: (1) The Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Level (*http://www.atsdr.cdc.gov/mrls/index.asp*), which is defined as ''an estimate of daily human exposure to a hazardous substance that is likely to be without an appreciable risk of adverse non-cancer health effects (other than cancer) over a specified duration of exposure''; (2) the CalEPA Chronic Reference Exposure Level (REL) (*http://www.oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf*), which is defined as ''the concentration level (that is expressed in units of micrograms per cubic meter ($\mu g/m^3$) for inhalation exposure and in a dose expressed in units of milligram per kilogram-day (mg/kg-day) for oral exposures), at or below which no adverse health effects are anticipated for a specified exposure duration''; or (3), as noted above, a scientifically credible dose-response value that has been developed in a

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[4] This metric comes from the Benzene NESHAP. See 54 FR 38046.

[5] 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).

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

[7] These classifications also coincide with the terms ''known carcinogen, probable carcinogen, and possible carcinogen,'' respectively, which are the terms advocated in the EPA's previous *Guidelines for Carcinogen Risk Assessment,* published in 1986 (51 FR 33992, September 24, 1986). Summing the risks of these individual compounds to obtain the cumulative cancer risks 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: *http://yosemite.epa.gov/sab/sabproduct.nsf/214C6E915BB04E14852570CA007A682C/$File/ecadv02001.pdf.*

manner consistent with the EPA guidelines and has undergone a peer review process similar to that used by the EPA, in place of or in concert with other values.

The EPA also evaluated screening estimates of acute exposures and risks for each of the HAP at the point of highest potential off-site exposure for each facility. To do this, the EPA estimated the risks when both the peak hourly emissions rate and worst-case dispersion conditions occur. We also assume that a person is located at the point of highest impact during that same time. In accordance with our mandate in section 112 of the CAA, we use the point of highest off-site exposure to assess the potential risk to the maximally exposed individual. In some cases, the agency may choose to refine the acute screen by also assessing the exposure that may occur at a centroid of a census block. The acute HQ is the estimated acute exposure divided by the acute dose-response value. In each case, the EPA calculated acute HQ values using best available, short-term dose-response values. These acute dose-response values, which are described below, include the acute REL, acute exposure guideline levels (AEGL) and emergency response planning guidelines (ERPG) for 1-hour exposure durations. As discussed below, we used conservative assumptions for emissions rates, meteorology and exposure location for our acute analysis.

As described in the *CalEPA's Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I, The Determination of Acute Reference Exposure Levels for Airborne Toxicants,* an acute REL value (*http://www.oehha.ca.gov/air/pdf/acuterel.pdf*) is defined as ‘‘the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration.’’ *Id.* at page 2. Acute REL values are based on the most sensitive, relevant, adverse health effect reported in the peer-reviewed medical and toxicological literature. Acute REL values 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.

As we state above, in assessing the potential risks associated with acute exposures to HAP, we do not follow a prioritization scheme and, therefore, we consider available dose-response values from multiple authoritative sources. In the RTR program, the EPA assesses acute risk using toxicity values derived from one hour exposures.

AEGL values were derived in response to recommendations from the National Research Council (NRC). As described in *Standing Operating Procedures (SOP) of the National Advisory Committee on Acute Exposure Guideline Levels for Hazardous Substances* (*http://www.epa.gov/oppt/aegl/pubs/sop.pdf*),[8] ‘‘the NRC's previous name for acute exposure levels—community emergency exposure levels—was replaced by the term AEGL to reflect the broad application of these values to planning, response, and prevention in the community, the workplace, transportation, the military, and the remediation of Superfund sites.’’ *Id.* at 2. This document also states that AEGL values ‘‘represent threshold exposure limits for the general public and are applicable to emergency exposures ranging from 10 minutes to eight hours.’’ *Id.* at 2.

The document lays out the purpose and objectives of AEGL by stating that ‘‘the primary purpose of the AEGL program and the National Advisory Committee for Acute Exposure Guideline Levels for Hazardous Substances is to develop guideline levels for once-in-a-lifetime, short-term exposures to airborne concentrations of acutely toxic, high-priority chemicals.’’ *Id.* at 21. In detailing the intended application of AEGL values, the document states that ‘‘[i]t is anticipated that the AEGL values will be used for regulatory and nonregulatory purposes by U.S. Federal and state agencies and possibly the international community in conjunction with chemical emergency response, planning, and prevention programs. More specifically, the AEGL values will be used for conducting various risk assessments to aid in the development of emergency preparedness and prevention plans, as well as real-time emergency response actions, for accidental chemical releases at fixed facilities and from transport carriers.’’ *Id.* at 31.

The AEGL–1 value is then 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.’’ *Id.* at 3. 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.* Similarly, the document defines AEGL–2 values 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.*

ERPG values are derived for use in emergency response, as described in the American Industrial Hygiene Association's Emergency Response Planning (ERP) Committee document titled, *ERPGS Procedures and Responsibilities* (*https://www.aiha.org/get-involved/AIHAGuidelineFoundation/EmergencyResponsePlanningGuidelines/Documents/ERP–SOPs2006.pdf*), which states that, ‘‘Emergency Response Planning Guidelines were developed for emergency planning and are intended as health based guideline concentrations for single exposures to chemicals.’’[9] *Id.* at 1. The ERPG–1 value 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 value 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.

As can be seen from the definitions above, the AEGL and ERPG values include the similarly-defined severity levels 1 and 2. For many chemicals, a severity level 1 value AEGL or ERPG has not been developed because the types of effects for these chemicals are not consistent with the AEGL–1/ERPG–1 definitions; in these instances, we compare higher severity level AEGL–2 or ERPG–2 values to our modeled exposure levels to screen for potential

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[8] National Academy of Sciences (NAS), 2001. *Standing Operating Procedures for Developing Acute Exposure Levels for Hazardous Chemicals,* page 2.

[9] *ERP Committee Procedures and Responsibilities.* November 1, 2006. American Industrial Hygiene Association.

acute concerns. When AEGL–1/ERPG–1 values are available, they are used in our acute risk assessments.

Acute REL values for 1-hour exposure durations are typically lower than their corresponding AEGL–1 and ERPG–1 values. Even though their definitions are slightly different, AEGL–1 values are often the same as the corresponding ERPG–1 values and AEGL–2 values are often equal to ERPG–2 values. Maximum HQ values from our acute screening risk assessments typically result when basing them on the acute REL value for a particular pollutant. In cases where our maximum acute HQ value exceeds 1, we also report the HQ value based on the next highest acute dose-response value (usually the AEGL–1 and/or the ERPG–1 value).

To develop screening estimates of acute exposures in the absence of hourly emissions data, generally we first develop estimates of maximum hourly emissions rates by multiplying the average actual annual hourly emissions rates by a default factor to cover routinely variable emissions. We choose the factor to use partially based on process knowledge and engineering judgment. The factor chosen also reflects a Texas study of short-term emissions variability, which showed that most peak emission events in a heavily-industrialized four-county area (Harris, Galveston, Chambers and Brazoria Counties, Texas) were less than twice the annual average hourly emissions rate. The highest peak emissions event was 74 times the annual average hourly emissions rate and the 99th percentile ratio of peak hourly emissions rate to the annual average hourly emissions rate was 9.[10] Considering this analysis, to account for more than 99 percent of the peak hourly emissions, we apply a conservative screening multiplication factor of 10 to the average annual hourly emissions rate in our acute exposure screening assessments as our default approach. However, we use a factor other than 10 if we have information that indicates that a different factor is appropriate for a particular source category. For this source category, there was no such information available and the default factor of 10 was used in the acute screening process.

Ideally, we would prefer to have continuous measurements over time to see how the emissions vary by each hour over an entire year. Having a frequency distribution of hourly emissions rates over a year would allow us to perform a probabilistic analysis to estimate potential threshold exceedances and their frequency of occurrence. Such an evaluation could include a more complete statistical treatment of the key parameters and elements adopted in this screening analysis. Recognizing that this level of data is rarely available, we instead rely on the multiplier approach.

As part of our acute risk assessment process, for cases where acute HQ values from the screening step are less than or equal to 1 (even under the conservative assumptions of the screening analysis), acute impacts are deemed negligible and no further analysis is performed. In cases where an acute HQ from the screening step are greater than 1, additional site-specific data would be considered to develop a more refined estimate of the potential for acute impacts of concern. However, for this source category, no acute values were greater than 1. Therefore, further refinement was not performed.

To better characterize the potential health risks associated with estimated acute exposures to HAP, and in response to a key recommendation from the SAB's peer review of the EPA's RTR risk assessment methodologies,[11] we generally examine a wider range of available acute health metrics (*e.g.,* RELs, AEGLs) than we do for our chronic risk assessments. This is in response to the SAB's acknowledgement that there are generally more data gaps and inconsistencies in acute reference values than there are in chronic reference values. In some cases, when Reference Value Arrays[12] for HAP have been developed, we consider additional acute values (*i.e.,* occupational and international values) to provide a more complete risk characterization.

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

The EPA conducted a screening analysis examining the potential for significant human health risks due to exposures via routes other than inhalation (*i.e.,* ingestion). We first determined whether any major sources in the source category emitted any HAP known to be persistent and bioaccumulative in the environment (PB–HAP). The PB–HAP compounds or compound classes are identified for the screening from the EPA's Air Toxics Risk Assessment Library (available at: *http://www2.epa.gov/fera/risk-assessment-and-modeling-air-toxics-risk-assessment-reference-library*). Since D/F is the only pollutant for which subpart RRR area sources are regulated under CAA section 112(d), this was the only PB–HAP evaluated in this screening analysis for area sources.

For major sources in the Secondary Aluminum Production source category, we identified emissions of cadmium compounds, D/F, lead compounds, mercury compounds and POM. Because one or more of these PB–HAP are emitted by at least one facility in the Secondary Aluminum Production source category, we proceeded to the next step of the evaluation. In this step, we determined whether the facility-specific emissions rates of the emitted PB–HAP were large enough to create the potential for significant non-inhalation human health risks under reasonable worst-case conditions. To facilitate this step, we developed emissions rate screening levels for several PB–HAP using 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 emissions rate screening levels are: lead, cadmium, D/F, mercury compounds and POM. We conducted a sensitivity analysis on the screening scenario to ensure that its key design parameters would represent the upper end of the range of possible values, such that it would represent a conservative but not impossible scenario. The facility-specific emissions rates of these PB–HAP were compared to the emission rate screening levels for these PB–HAP to assess the potential for significant human health risks via non-inhalation pathways. We call this application of the TRIM.FaTE model the Tier 1 TRIM-screen or Tier 1 screen.

For the purpose of developing emissions rates for our Tier 1 TRIM-screen, we derived emission levels for these PB–HAP (other than lead compounds) at which the maximum excess lifetime cancer risk would be 1-in-1 million (*i.e.,* for D/F and POM) or, for HAP that cause non-cancer health effects (*i.e.,* cadmium compounds and mercury compounds), the maximum HQ would be 1. If the emissions rate of any PB–HAP included in the Tier 1 screen exceeds the Tier 1 screening emissions rate for any facility, we conduct a

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[10] See *http://www.tceq.state.tx.us/compliance/field_ops/eer/index.html* or docket to access the source of these data.

[11] The SAB peer review of *RTR Risk Assessment Methodologies* is available at: *http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf.*

[12] U.S. EPA. (2009) Chapter 2.9 Chemical Specific Reference Values for Formaldehyde in Graphical Arrays of Chemical-Specific Health Effect Reference Values for Inhalation Exposures (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/061 and available online at *http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=211003.*

second screen, which we call the Tier 2 TRIM-screen or Tier 2 screen.

In the Tier 2 screen, the location of each facility that exceeded the Tier 1 emission rate is used to refine the assumptions associated with the environmental scenario while maintaining the exposure scenario assumptions. A key assumption that is part of the Tier 1 screen is that a lake is located near the facility; we confirm the existence of lakes near the facility as part of the Tier 2 screen. We then adjust the risk-based Tier 1 screening level for each PB–HAP for each facility based on an understanding of how exposure concentrations estimated for the screening scenarios for the subsistence fisher and the subsistence farmer change with meteorology and environmental assumptions. PB–HAP emissions that do not exceed these new Tier 2 screening levels are considered to pose no unacceptable risks. If the PB–HAP emissions for a facility exceed the Tier 2 screening emissions rate and data are available, we may decide to conduct a more refined Tier 3 multipathway screening analysis. There are several analyses that can be included in a Tier 3 screen depending upon the extent of refinement warranted, including validating that the lake is fishable and considering plume-rise to estimate emissions lost above the mixing layer. If the Tier 3 screen is exceeded, the EPA may further refine the assessment.

For this source category, we conducted a Tier 3 screening analysis for six major sources with Tier 2 cancer screen values greater than or equal to 50 times the Tier 2 threshold for the subsistence fisher scenario. The major sources represented the highest screened cancer risk for multipathway impacts. Therefore, further screening analyses were not performed on the area sources. A detailed discussion of the approach for this risk assessment can be found in Appendix 8 of the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal.*

In evaluating the potential multipathway risk from emissions of lead compounds, rather than developing a screening emissions rate for them, we compared maximum estimated chronic inhalation exposures with the level of the current National Ambient Air Quality Standard (NAAQS) for lead.[13] Values below the level of the primary (health-based) lead NAAQS were considered to have a low potential for multipathway risk.

For further information on the multipathway analysis approach, see the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal,* which is available in the docket for this action.

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

a. Adverse Environmental Effect

The EPA conducts a screening assessment to examine the potential for adverse environmental effects 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.''

b. Environmental HAP

The EPA focuses on seven HAP, which we refer to as ''environmental HAP,'' in its screening analysis: Five PB–HAP and two acid gases. The five PB–HAP are cadmium, D/F, POM, mercury (both inorganic mercury and methyl mercury) and lead compounds. The two acid gases are HCl and HF. The rationale for including these seven HAP in the environmental risk screening analysis is presented below.

The HAP that persist and bioaccumulate are of particular environmental concern because they accumulate in the soil, sediment and water. The PB–HAP are taken up, through sediment, soil, water and/or ingestion of other organisms, by plants or animals (*e.g.,* small fish) at the bottom of the food chain. As larger and larger predators consume these organisms, concentrations of the PB–HAP in the animal tissues increase as does the potential for adverse effects. The five PB–HAP we evaluate as part of our screening analysis account for 99.8 percent of all PB–HAP emissions nationally from stationary sources (on a mass basis from the 2005 National Emissions Inventory (NEI)).

In addition to accounting for almost all of the mass of PB–HAP emitted, we note that the TRIM.FaTE model that we use to evaluate multipathway risk allows us to estimate concentrations of cadmium compounds, D/F, POM and mercury in soil, sediment and water. For lead compounds, we currently do not have the ability to calculate these concentrations using the TRIM.FaTE model. Therefore, to evaluate the potential for adverse environmental effects from lead compounds, we compare the estimated HEM-modeled exposures from the source category emissions of lead with the level of the secondary NAAQS for lead.[14] We consider values below the level of the secondary lead NAAQS as unlikely to cause adverse environmental effects.

Due to their well-documented potential to cause direct damage to terrestrial plants, we include two acid gases, HCl and HF, in the environmental screening analysis. According to the 2005 NEI, HCl and HF account for about 99 percent (on a mass basis) of the total acid gas HAP emitted by stationary sources in the U.S. In addition to the potential to cause direct damage to plants, high concentrations of HF in the air have been linked to fluorosis in livestock. Air concentrations of these HAP are already calculated as part of the human multipathway exposure and risk screening analysis using the HEM3–AERMOD air dispersion model, and we are able to use the air dispersion modeling results to estimate the potential for an adverse environmental effect.

The EPA acknowledges that other HAP beyond the seven HAP discussed above may have the potential to cause adverse environmental effects. Therefore, the EPA may include other relevant HAP in its environmental risk screening in the future, as modeling science and resources allow. The EPA invites comment on the extent to which other HAP emitted by the source category may cause adverse environmental effects. Such information should include references to peer-reviewed ecological effects benchmarks that are of sufficient quality for making

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

[14] The secondary lead NAAQS is a reasonable measure of determining whether there is an adverse environmental effect since it was established considering ''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.''

regulatory decisions, as well as information on the presence of organisms located near facilities within the source category that such benchmarks indicate could be adversely affected.

c. Ecological Assessment Endpoints and Benchmarks for PB–HAP

An important consideration in the development of the EPA's screening methodology is the selection of ecological assessment endpoints and benchmarks. Ecological assessment endpoints are defined by the ecological entity (*e.g.,* aquatic communities including fish and plankton) and its attributes (*e.g.,* frequency of mortality). Ecological assessment endpoints can be established for organisms, populations, communities or assemblages and ecosystems.

For PB–HAP (other than lead compounds), we evaluated the following community-level ecological assessment endpoints to screen for organisms directly exposed to HAP in soils, sediment and water:

- Local terrestrial communities (*i.e.,* soil invertebrates, plants) and populations of small birds and mammals that consume soil invertebrates exposed to PB–HAP in the surface soil;
- Local benthic (*i.e.,* bottom sediment dwelling insects, amphipods, isopods and crayfish) communities exposed to PB–HAP in sediment in nearby water bodies; and
- Local aquatic (water-column) communities (including fish and plankton) exposed to PB–HAP in nearby surface waters.

For PB–HAP (other than lead compounds), we also evaluated the following population-level ecological assessment endpoint to screen for indirect HAP exposures of top consumers via the bioaccumulation of HAP in food chains;

- Piscivorous (*i.e.,* fish-eating) wildlife consuming PB–HAP-contaminated fish from nearby water bodies.

For cadmium compounds, D/F, POM and mercury, we identified the available ecological benchmarks for each assessment endpoint. An ecological benchmark represents a concentration of HAP (*e.g.,* 0.77 µg of HAP per liter of water) that has been linked to a particular environmental effect level through scientific study. For PB–HAP we identified, where possible, ecological benchmarks at the following effect levels:

- Probable effect levels (PEL): Level above which adverse effects are expected to occur frequently;
- Lowest-observed-adverse-effect level (LOAEL): The lowest exposure level tested at which there are biologically significant increases in frequency or severity of adverse effects; and
- No-observed-adverse-effect levels (NOAEL): The highest exposure level tested at which there are no biologically significant increases in the frequency or severity of adverse effect.

We established a hierarchy of preferred benchmark sources to allow selection of benchmarks for each environmental HAP at each ecological assessment endpoint. In general, the EPA sources that are used at a programmatic level (*e.g.,* Office of Water, Superfund Program) were used in the analysis, if available. If not, the EPA benchmarks used in regional programs (*e.g.,* Superfund) were used. If benchmarks were not available at a programmatic or regional level, we used benchmarks developed by other federal agencies (*e.g.,* National Oceanic and Atmospheric Administration (NOAA)) or state agencies.

Benchmarks for all effect levels are not available for all PB–HAP and assessment endpoints. 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.

d. Ecological Assessment Endpoints and Benchmarks for Acid Gases

The environmental screening analysis also evaluated potential damage and reduced productivity of plants due to direct exposure to acid gases in the air. For acid gases, we evaluated the following ecological assessment endpoint:

- Local terrestrial plant communities with foliage exposed to acidic gaseous HAP in the air.

The selection of ecological benchmarks for the effects of acid gases on plants followed the same approach as for PB–HAP (*i.e.,* we examine all of the available benchmarks). For HCl, the EPA identified chronic benchmark concentrations. We note that the benchmark for chronic HCl exposure to plants is greater than the reference concentration for chronic inhalation exposure for human health. This means that where the EPA includes regulatory requirements to prevent an exceedance of the reference concentration for human health, additional analyses for adverse environmental effects of HCl would not be necessary.

For HF, the EPA identified chronic benchmark concentrations for plants and evaluated chronic exposures to plants in the screening analysis. High concentrations of HF in the air have also been linked to fluorosis in livestock. However, the HF concentrations at which fluorosis in livestock occur are higher than those at which plant damage begins. Therefore, the benchmarks for plants are protective of both plants and livestock.

e. Screening Methodology

For the environmental risk screening analysis, the EPA first determined whether any of the major source facilities in the Secondary Aluminum Production source category emitted any of the seven environmental HAP. We identified emissions of five of the PB–HAP (cadmium, mercury, lead, D/F, PAHs) and two acid gases (HCl and HF). Because one or more of the seven environmental HAP evaluated were emitted by facilities in the source category, we proceeded to the second step of the evaluation. Since D/F is the only pollutant for which subpart RRR area sources are regulated under CAA section 112(d), this was the only PB–HAP evaluated in this screening analysis.

f. PB–HAP Methodology

For cadmium, mercury, POM and D/F, the environmental screening analysis consists of two tiers, while lead compounds are analyzed differently as discussed earlier. In the first tier, we determined whether the maximum facility-specific emission rates of each of the emitted environmental HAP for the major sources were large enough to create the potential for adverse environmental effects under reasonable worst-case environmental conditions. This same assessment was done for area sources for D/F because this is the only pollutant for which subpart RRR area sources are regulated under CAA section 112(d). These are the same environmental conditions used in the human multipathway exposure and risk screening analysis.

To facilitate this step, TRIM.FaTE was run for each PB–HAP under hypothetical environmental conditions designed to provide conservatively high HAP concentrations. The model was set to maximize runoff from terrestrial parcels into the modeled lake, which in turn, maximized the chemical concentrations in the water, the sediments and the fish. The resulting media concentrations were then used to back-calculate a screening level emission rate that corresponded to the relevant exposure benchmark concentration value for each assessment endpoint. To assess emissions from a facility, the reported emission rate for each PB–HAP was compared to the screening level emission rate for that PB–HAP for each assessment endpoint. If emissions from a facility do not exceed the Tier 1 screening level, the facility ''passes'' the screen, and, therefore, is not evaluated further under the screening approach. If emissions from a facility exceed the Tier 1 screening level, we evaluate the facility further in Tier 2.

In Tier 2 of the environmental screening analysis, the emission rate screening levels 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 screen. The modeling domain for each facility in the Tier 2 analysis consists of eight octants. Each octant contains 5 modeled soil concentrations at various distances from the facility (5 soil concentrations × 8 octants = total of 40 soil concentrations per facility) and one lake with modeled concentrations for water, sediment and fish tissue. In the Tier 2 environmental risk screening analysis, the 40 soil concentration points are averaged to obtain an average soil concentration for each facility for each 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 level, the facility passes the screen, and is typically not evaluated further. If emissions from a facility exceed the Tier 2 screening level, the facility does not pass the screen and, therefore, may have the potential to cause adverse environmental effects. Such facilities are evaluated further to investigate factors such as the magnitude and characteristics of the area of exceedance.

g. Acid Gas Methodology

The environmental screening analysis evaluates the potential phytotoxicity and reduced productivity of plants due to chronic exposure to acid gases. The environmental risk screening methodology for acid gases is a single-tier screen that compares the average off-site ambient air concentration over the modeling domain to ecological benchmarks for each of the acid gases. Because air concentrations are compared directly to the ecological benchmarks, emission-based screening levels are not calculated for acid gases as they are in the ecological risk screening methodology for PB–HAP.

For purposes of ecological risk screening, the EPA identifies a potential for adverse environmental effects to plant communities from exposure to acid gases when the average concentration of the HAP around a facility exceeds the LOAEL ecological benchmark. In such cases, we further investigate factors such as the magnitude and characteristics of the area of exceedance (*e.g.,* land use of exceedance area, size of exceedance area) to determine if there is an adverse environmental effect. For further information on the environmental screening analysis approach, see the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal,* which is available in the docket for this action.

6. How did 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 of interest, but also emissions of HAP from all other emissions sources at the facility for which we have data. For the Secondary Aluminum Production source category, we had nine facilities that were co-located with primary aluminum reduction plants.

7. How did we consider uncertainties in risk assessment?

In the Benzene NESHAP, we concluded that risk estimation uncertainty should be considered in our decision-making under the ample margin of safety framework. 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 protective 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. A more thorough discussion of these uncertainties is included in the *Development of the RTR Supplemental Proposal Risk Modeling Dataset for the Secondary Aluminum Production Source Category* and *Modeling Input Revisions for the RTR Risk Modeling Dataset for the Secondary Aluminum Production Source Category,* which are available in the docket for this action. The other uncertainties are described in more detail in the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal,* which is available in the docket for this action.

a. Uncertainties in the RTR Emissions Dataset

Although the development of the RTR emissions dataset involved quality assurance/quality control processes, the accuracy of emissions values will vary depending on the source of the data, the degree to which data are incomplete or missing, the degree to which assumptions made to complete the datasets are accurate, errors in emission estimates and other factors. The emission estimates considered in this analysis generally are annual totals for certain years, and they do not reflect short-term fluctuations during the course of a year or variations from year to year. The estimates of peak hourly emission rates for the acute effects screening assessment were based on an emission adjustment factor of 10 applied to the average annual hourly emission rates for all emission process groups, which are intended to account for emission fluctuations due to normal facility operations. A description of the development of the emissions dataset is in section II.D of this preamble and in the documents, *Development of the RTR Supplemental Proposal Risk Modeling Dataset for the Secondary Aluminum Production Source Category* and *Modeling Input Revisions for the RTR Risk Modeling Dataset for the Secondary Aluminum Production Source Category,* which are in the docket for this rulemaking.

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.

c. Uncertainties in Inhalation Exposure

The EPA did not include the effects of human mobility on exposures in the assessment. Specifically, short-term mobility and long-term mobility between census blocks in the modeling domain were not considered.[15] The approach of not considering short or long-term population mobility does not bias the estimate of the theoretical MIR (by definition), nor does it affect the estimate of cancer incidence because the total population number remains the same. It does, however, affect the shape of the distribution of individual risks across the affected population, shifting it toward higher estimated individual risks at the upper end and reducing the number of people estimated to be at lower risks, thereby increasing the estimated number of people at specific high risk levels (*e.g.,* 1-in-10 thousand or 1-in-1 million).

In addition, the assessment predicted the chronic exposures at the centroid of each populated census block as surrogates for the exposure concentrations for all people living in that block. Using the census block centroid to predict chronic exposures tends to over-predict exposures for people in the census block who live farther from the facility and under-predict exposures for people in the census block who live closer to the facility. Thus, using the census block centroid to predict chronic exposures may lead to a potential understatement or overstatement of the true maximum impact, but is an unbiased estimate of average risk and incidence. We reduce this uncertainty by analyzing large census blocks near facilities using aerial imagery and adjusting the location of the block centroid to better represent the population in the block, as well as adding additional receptor locations where the block population is not well represented by a single location.

The assessment evaluates the cancer inhalation risks associated with pollutant exposures over a 70-year period, which is the assumed lifetime of an individual. In reality, both the length of time that modeled emission sources at facilities actually operate (*i.e.,* more or less than 70 years) and the domestic growth or decline of the modeled industry (*i.e.,* the increase or decrease in the number or size of domestic facilities) will influence the future risks posed by a given source or source category. Depending on the characteristics of the industry, these factors will, in most cases, result in an overestimate both in individual risk levels and in the total estimated number of cancer cases. However, in the unlikely scenario where a facility maintains, or even increases, its emissions levels over a period of more than 70 years, residents live beyond 70 years at the same location, and the residents spend most of their days at that location, then the cancer inhalation risks could potentially be underestimated. However, annual cancer incidence estimates from exposures to emissions from these sources would not be affected by the length of time an emissions source operates.

The exposure estimates used in these analyses assume chronic exposures to ambient (outdoor) levels of pollutants. Because most people spend the majority of their time indoors, actual exposures may not be as high, depending on the characteristics of the pollutants modeled. For many of the HAP, indoor levels are roughly equivalent to ambient levels, but for very reactive pollutants or larger particles, indoor levels are typically lower. This factor has the potential to result in an overestimate of 25 to 30 percent of exposures.[16]

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 that should be highlighted. 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 humans at the location of the maximum concentration. In the acute screening assessment that we conduct under the RTR program, we assume that peak emissions from the source category and worst-case meteorological conditions co-occur, thus, resulting in maximum ambient concentrations. These two events are unlikely to occur at the same time, making these assumptions conservative. We then include the additional assumption that a person is located at this point during this same time period. For this source category, these assumptions would tend to be worst-case actual exposures as it is unlikely that a person would be located at the point of maximum exposure during the time when peak emissions and worst-case meteorological conditions occur simultaneously.

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 non-cancer effects from both chronic and acute exposures. Some uncertainties may be considered quantitatively, and others generally are expressed in qualitative terms. We note as a preface to this discussion a point on dose-response uncertainty that is brought out in the EPA's *2005 Cancer Guidelines*; 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'' (*EPA 2005 Cancer Guidelines,* pages 1–7). This is the approach followed here as summarized in the next several paragraphs. A complete detailed discussion of uncertainties and variability in dose-response relationships is given in the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal,* which is available in the docket for this action.

Cancer URE values used in our risk assessments are those that have been developed to generally provide an upper bound estimate of risk. 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).[17] In some circumstances, the true risk could be as low as zero; however, in other circumstances the risk could be greater.[18] When developing an upper bound estimate of risk and to provide risk values that do not underestimate risk, health-protective default approaches are generally used. To err on the side of ensuring adequate health protection, the EPA typically uses the upper bound estimates rather than lower bound or central tendency estimates in our risk assessments, an approach that may have limitations for

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[15] Short-term mobility is movement from one micro-environment to another over the course of hours or days. Long-term mobility is movement from one residence to another over the course of a lifetime.

[16] U.S. EPA. *National-Scale Air Toxics Assessment for 1996.* (EPA 453/R–01–003; January 2001; page 85.)

[17] IRIS glossary (*http://www.epa.gov/NCEA/iris/help_gloss.htm*).

[18] 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.

other uses (*e.g.,* priority-setting or expected benefits analysis).

Chronic non-cancer RfC and reference dose (RfD) values represent chronic exposure levels that are intended to be health-protective levels. Specifically, these values provide an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure (RfC) or a daily oral exposure (RfD) to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. To derive values that are intended to be ''without appreciable risk,'' the methodology relies upon an uncertainty factor (UF) approach (U.S. EPA, 1993, 1994) which considers uncertainty, variability and gaps in the available data. The UF are applied to derive reference values that are intended to protect against appreciable risk of deleterious effects. The UF are commonly default values,[19] *e.g.,* factors of 10 or 3, used in the absence of compound-specific data; where data are available, UF may also be developed using compound-specific information. When data are limited, more assumptions are needed and more UF are used. Thus, there may be a greater tendency to overestimate risk in the sense that further study might support development of reference values that are higher (*i.e.,* less potent) because fewer default assumptions are needed. However, for some pollutants, it is possible that risks may be underestimated.

While collectively termed ''UF,'' these factors account for a number of different quantitative considerations when using observed animal (usually rodent) or human toxicity data in the development of the RfC. The UF are intended to account for: (1) Variation in susceptibility among the members of the human population (*i.e.,* inter-individual variability); (2) uncertainty in extrapolating from experimental animal data to humans (*i.e.,* interspecies differences); (3) uncertainty in extrapolating from data obtained in a study with less-than-lifetime exposure (*i.e.,* extrapolating from sub-chronic to chronic exposure); (4) uncertainty in extrapolating the observed data to obtain an estimate of the exposure associated with no adverse effects; and (5) uncertainty when the database is incomplete or there are problems with the applicability of available studies.

Many of the UF used to account for variability and uncertainty in the development of acute reference values are quite similar to those developed for chronic durations, but they more often use individual UF values that may be less than 10. The UF are applied based on chemical-specific or health effect-specific information (*e.g.,* simple irritation effects do not vary appreciably between human individuals, hence a value of 3 is typically used), or based on the purpose for the reference value (see the following paragraph). The UF applied in acute reference value derivation include: (1) Heterogeneity among humans; (2) uncertainty in extrapolating from animals to humans; (3) uncertainty in lowest observed adverse effect (exposure) level to no observed adverse effect (exposure) level adjustments; and (4) uncertainty in accounting for an incomplete database on toxic effects of potential concern. 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 reference value at another exposure duration (*e.g.,* 1 hour).

Not all acute reference 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 reference value or values being exceeded. Where relevant to the estimated exposures, the lack of short-term dose-response values at different levels of severity should be factored into the risk characterization as potential uncertainties.

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

For a group of compounds that are unspeciated (*e.g.,* glycol ethers), we conservatively use the most protective reference 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 reference value, we also apply the most protective reference value from the other compounds in the group to estimate risk.

e. Uncertainties in the Multipathway Assessment

For each source category, we generally rely on site-specific levels of PB-HAP emissions to determine whether a refined assessment of the impacts from multipathway exposures is necessary. This determination is based on the results of a tiered screening analysis that relies on the outputs from models that estimate environmental pollutant concentrations and human exposures for four PB-HAP. 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.[20]

Model uncertainty concerns whether the selected models are appropriate for the assessment being conducted and whether they adequately represent the actual processes that might occur for that situation. An example of model uncertainty is the question of whether the model adequately describes the movement of a pollutant through the soil. This type of uncertainty is difficult to quantify. However, based on feedback received from previous SAB reviews and other reviews, we are confident that the models used in the screen are

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[19] According to the NRC report, *Science and Judgment in Risk Assessment* (NRC, 1994) ''[Default] options are generic approaches, based on general scientific knowledge and policy judgment, that are applied to various elements of the risk assessment process when the correct scientific model is unknown or uncertain.'' The 1983 NRC report, *Risk Assessment in the Federal Government: Managing the Process,* defined default option as ''the option chosen on the basis of risk assessment policy that appears to be the best choice in the absence of data to the contrary'' (NRC, 1983a, p. 63). Therefore, default options are not rules that bind the agency; rather, the agency may depart from them in evaluating the risks posed by a specific substance when it believes this to be appropriate. In keeping with the EPA's goal of protecting public health and the environment, default assumptions are used to ensure that risk to chemicals is not underestimated (although defaults are not intended to overtly overestimate risk). See EPA, 2004, *An Examination of EPA Risk Assessment Principles and Practices,* EPA/100/B–04/001 available at: *http://www.epa.gov/osa/pdfs/ratf-final.pdf.*

[20] 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.

appropriate and state-of-the-art for the multipathway risk assessments conducted in support of RTR.

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 screen, 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 and 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. The multipathway screens include some hypothetical elements, namely the hypothetical farmer and fisher scenarios. It is important to note that even though the multipathway assessment has been conducted, no data exist to verify the existence of either the farmer or fisher scenario outlined above.

In Tier 2 of the multipathway assessment, 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 screen. The assumptions and the associated uncertainties regarding the selected ingestion exposure scenario are the same for all the Tiers.

For both Tiers 1 and 2 of the multipathway assessment, 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 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 not screen out, it does not mean that multipathway impacts are significant, only that we cannot rule out that possibility and that a refined multipathway screening analysis for the site might be necessary to obtain a more accurate risk characterization for the source category.

For further information on uncertainties and the multipathway screening methods, refer to the Appendix 5 of the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal*.

We completed a Tier 3 refined multipathway screening analysis for this supplemental proposal for assessing multipathway risks. This assessment contains less uncertainty compared to the Tier 1 and Tier 2 screens. The Tier 3 screen reduces uncertainty through improved lake evaluations used in the Tier 2 screen and by calculating the amount of mass lost to the upper air sink through plume rise. Nevertheless, some uncertainties also exist with these refined assessments. The Tier 3 multipathway screen and related uncertainties are described in detail in the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal,* which is available in the docket for this action.

f. Uncertainties in the Environmental Risk Screening Assessment

For each source category, we generally rely on site-specific levels of environmental HAP emissions to perform an environmental screening assessment. The environmental screening assessment is based on the outputs from models that estimate environmental HAP concentrations. The same models, specifically the TRIM.FaTE multipathway model and the AERMOD air dispersion model, are used to estimate environmental HAP concentrations for both the human multipathway screening analysis and for the environmental screening analysis. Therefore, both screening assessments have similar modeling uncertainties.

Two important types of uncertainty associated with the use of these models in RTR environmental screening assessments—and inherent to any assessment that relies on environmental modeling—are model uncertainty and input uncertainty.[21]

Model uncertainty concerns whether the selected models are appropriate for the assessment being conducted and whether they adequately represent the movement and accumulation of environmental HAP emissions 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 SAB reviews and other reviews, we are confident that the models used in the screen are appropriate and state-of-the-art for the environmental risk assessments conducted in support of our RTR analyses.

Input uncertainty is concerned with how accurately the models have been configured and parameterized for the assessment at hand. For Tier 1 of the environmental screen for PB–HAP, we configured the models to avoid underestimating exposure and risk to reduce the likelihood that the results indicate the risks are lower than they actually are. 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, the location and size of any bodies of water, meteorology, surface water and soil characteristics and structure of the aquatic food web. In Tier 1, we used the maximum facility-specific emissions for the PB–HAP (other than lead compounds, which were evaluated by comparison to the secondary lead NAAQS) that were included in the environmental screening assessment and each of the media when comparing to ecological benchmarks. This is consistent with the conservative design of Tier 1 of the screen. In Tier 2 of the environmental screening analysis for PB–HAP, 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 locations of water bodies near the facility location. 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 screen. To better represent widespread impacts, the modeled soil concentrations are averaged in Tier 2 to obtain one average soil concentration value for each facility and for each PB–HAP. For PB–HAP concentrations in water, sediment and fish tissue, the

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[21] In the context of this discussion, the term ''uncertainty,'' as it pertains to exposure and risk assessment, 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.

highest value for each facility for each pollutant is used.

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 both Tiers 1 and 2 of the environmental screening assessment, 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 potential risks for adverse environmental impacts.

Uncertainty also exists in the ecological benchmarks for the environmental risk screening analysis. We established a hierarchy of preferred benchmark sources to allow selection of benchmarks for each environmental HAP at each ecological assessment endpoint. In general, EPA benchmarks used at a programmatic level (*e.g.,* Office of Water, Superfund Program) were used, if available. If not, we used EPA benchmarks used in regional programs (*e.g.,* Superfund Program). If benchmarks were not available at a programmatic or regional level, we used benchmarks developed by other agencies (*e.g.,* NOAA) or by state agencies.

In all cases (except for lead compounds, which were evaluated through a comparison to the NAAQS), we searched for benchmarks at the following three effect levels, as described in section III.A.6 of this preamble:

1. A no-effect level (*i.e.,* NOAEL).
2. Threshold-effect level (*i.e.,* LOAEL).
3. Probable effect level (*i.e.,* PEL).

For some ecological assessment endpoint/environmental HAP combinations, we could identify benchmarks for all three effect levels, but for most, we could not. In one case, where different agencies derived significantly different numbers to represent a threshold for effect, we included both. In several cases, only a single benchmark was available. In cases where multiple effect levels were available for a particular PB–HAP and assessment endpoint, we used all of the available effect levels to help us to determine whether risk exists and if the risks could be considered significant and widespread.

The EPA evaluates the following seven HAP in the environmental risk screening assessment: cadmium, D/F, POM, mercury (both inorganic mercury and methyl mercury), lead compounds, HCl and HF, where applicable. These seven HAP represent pollutants that can cause adverse impacts for plants and animals either through direct exposure to HAP in the air or through exposure to HAP that is deposited from the air onto soils and surface waters. These seven HAP also represent those HAP for which we can conduct a meaningful environmental risk screening assessment. For other HAP not included in our screening assessment, 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 the seven HAP that we are evaluating may have the potential to cause adverse environmental effects and, therefore, the EPA may evaluate other relevant HAP in the future, as modeling science and resources allow.

Further information on uncertainties and the Tier 1 and 2 screening methods is provided in Appendix 5 of the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal,* available in the docket for this action.

B. How did we consider the risk results in making decisions for this supplemental proposal?

As discussed in section II.A of this preamble, in evaluating and developing standards under CAA section 112(f)(2), we apply a two-step process to address residual risk. 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) of approximately [1-in-10 thousand] [*i.e.,* 100-in-1 million].’’ 54 FR 38045, September 14, 1989. If risks are unacceptable, the EPA must determine the emissions standards necessary to bring risks to an acceptable level without considering costs. In the second step of the process, the EPA considers whether the emissions standards provide an ample margin of safety ‘‘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.

In past residual risk actions, the EPA considered a number of human health risk metrics associated with emissions from the categories under review, including the MIR, the number of persons in various risk ranges, cancer incidence, the maximum non-cancer HI and the maximum acute non-cancer hazard. See, *e.g.,* 72 FR 25138, May 3, 2007; 71 FR 42724, July 27, 2006. The EPA considered this health information for both actual and allowable emissions. See, *e.g.,* 75 FR 65068, October 21, 2010; 75 FR 80220, December 21, 2010; 76 FR 29032, May 19, 2011. The EPA also discussed risk estimation uncertainties and considered the uncertainties in the determination of acceptable risk and ample margin of safety in these past actions. The EPA considered this same type of information in support of this action.

The agency is considering these various measures of health information to inform our determinations of risk acceptability and ample margin of safety under CAA section 112(f). 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 [previous] section 112 is best judged on the basis of a broad set of health risk measures and information.’’ 54 FR 38046, September 14, 1989. 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. In responding to comment on our policy under the Benzene NESHAP, the EPA explained that:

> ‘‘[t]he 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 [her] 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 [her] judgment, believes are appropriate to determining what will 'protect the public health'.''

See 54 FR at 38057, September 14, 1989. Thus, the level of the MIR is only one factor to be weighed in determining acceptability of risks. The Benzene NESHAP explained that ''an MIR of approximately one in 10 thousand should ordinarily be the upper end of the range of acceptability. As risks increase above this benchmark, they become presumptively less acceptable under CAA section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability. Or, the Agency may find, in a particular case, that a risk that includes MIR less than the presumptively acceptable level is unacceptable in the light of other health risk factors.'' *Id.* at 38045. 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 those HAP risks that may be associated with emissions from other facilities that do not include the source categories in question, mobile source emissions, natural source emissions, persistent environmental pollution or atmospheric transformation in the vicinity of the sources in these categories.

The agency 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 non-cancer risks, where pollutant-specific exposure health reference levels (*e.g.,* RfCs) are based on the assumption that thresholds exist for adverse health effects. For example, the agency recognizes that, although exposures attributable to emissions from a source category or facility alone may not indicate the potential for increased risk of adverse non-cancer 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 increased risk of adverse non-cancer health effects. In May 2010, the 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.'' [22]

In response to the SAB recommendations, the EPA is incorporating cumulative risk analyses into its RTR risk assessments, including those reflected in this proposal. The agency is: (1) Conducting facility-wide assessments, which include source category emission points as well as other emission points within the facilities; (2) considering sources in the same category whose emissions result in exposures to the same individuals; and (3) for some persistent and bioaccumulative pollutants, analyzing the ingestion route of exposure. In addition, the RTR risk assessments have always considered aggregate cancer risk from all carcinogens and aggregate non-cancer hazard indices from all non-carcinogens affecting the same target organ system.

Although we are interested in placing source category and facility-wide HAP risks in the context of total HAP risks from all sources combined in the vicinity of each source, we are concerned about the uncertainties of doing so. Because of the contribution to total HAP risk from emission sources other than those that we have studied in depth during this RTR review, such estimates of total HAP risks 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.

C. How did we perform the technology review?

Our technology review focused on the identification and evaluation of developments in practices, processes and control technologies that have occurred since the MACT standards were promulgated. Where we identified such developments, in order to inform our decision of whether it is ''necessary'' to revise the emissions standards, we analyzed the technical feasibility of applying these developments and the estimated costs, energy implications, non-air environmental impacts, as well as considering the emission reductions. We also considered the appropriateness of applying controls to new sources versus retrofitting existing sources.

Based on our analyses of the available data and information, we identified potential developments in practices, processes and control technologies. For this exercise, we considered 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 emission 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.
- 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).

We reviewed a variety of data sources in our investigation of potential practices, processes or controls to consider. Among the sources we reviewed were the NESHAP for various industries that were promulgated since the MACT standards being reviewed in this action. We reviewed the regulatory requirements and/or technical analyses associated with these regulatory actions to identify any practices, processes and control technologies considered in these efforts that could be applied to emission

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[22] The EPA's responses to this and all other key recommendations of the SAB's advisory on RTR risk assessment methodologies (which is available at: *http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf*) are outlined in a memo to this rulemaking docket from David Guinnup titled, *EPA's Actions in Response to the Key Recommendations of the SAB Review of RTR Risk Assessment Methodologies.*

sources in the Secondary Aluminum Production source category, as well as the costs, non-air impacts and energy implications associated with the use of these technologies. Additionally, we requested information from facilities regarding developments in practices, processes or control technology. Finally, we reviewed information from other sources, such as state and/or local permitting agency databases and industry-supported databases.

IV. Revised Analytical Results and Proposed Decisions for the Secondary Aluminum Production Source Category

A. What are the results of the risk assessment and analysis?

1. *Inhalation Risk Assessment Results*

Table 3 provides an overall summary of the results of the inhalation risk assessment.

TABLE 3—SECONDARY ALUMINUM PRODUCTION SOURCE CATEGORY INHALATION RISK ASSESSMENT RESULTS

Number of facilities modeled	Maximum individual cancer risk (in 1-million)[a]		Estimated annual cancer incidence (cases/yr)[d]	Estimated population at increased risk of cancer ≥1-in-1 million[d]	Maximum chronic non-cancer TOSHI[b]		Worst-case maximum screening acute non-cancer HQ[c]
	Based on actual emissions	Based on allowable emissions			Based on actual emissions level	Based on allowable emissions level	
Major Sources (52)	0.6	4	0.0007	0	0.04	0.1	$HQ_{(REL)}$ = 0.7 (HF). $HQ_{(AEGL1)}$ = 0.4 (HCl).
Area Sources (103)	0.3	1	0.001	0	0.0003	0.001	NA.
Facility-wide (52 Major Sources)	70	NA	0.05	760,000	1	NA	NA.

[a] Estimated maximum individual excess lifetime cancer risk due to HAP emissions from the source category for major sources and for D/F emissions from the area sources.

[b] Maximum TOSHI. The target organ with the highest TOSHI for the Secondary Aluminum Production source category for both actual and allowable emissions is the respiratory system.

[c] There is no acute dose-response value for D/F. Thus an acute HQ value for area sources was not calculated. The maximum off-site HQ acute value of 0.7 for actuals is driven by emissions of hydrofluoric acid. See section III.A.3 of this document for explanation of acute dose-response values. Acute assessments are not performed on allowable emissions.

[d] These estimates are based upon actual emissions.

The inhalation risk modeling performed to estimate risks based on actual and allowable emissions relied primarily on emissions data from the ICRs. The results of the chronic baseline inhalation cancer risk assessment indicate that, based on estimates of current actual emissions, the MIR posed by the Secondary Aluminum Production source category from major sources and from area sources was less than 1-in-1 million. The estimated cancer incidence is slightly higher for area sources compared to the major sources due to the larger number of area sources nationwide. The total estimated cancer incidence from secondary aluminum production sources from both major and area sources based on actual emission levels is 0.002 excess cancer cases per year, with emissions of D/F, naphthalene and PAH contributing 48 percent, 31 percent and 11 percent, respectively, to this cancer incidence. In addition, we note that there are no excess cancer risks greater than or equal to 1-in-1 million as a result of actual emissions from this source category over a lifetime. The maximum modeled chronic non-cancer HI (TOSHI) value for the source category for both major and area sources based on actual emissions was estimated to be 0.04, with HCl emissions from group 1 furnaces accounting for 99 percent of the HI.

When considering MACT-allowable emissions, the MIR is estimated to be up to 4-in-1 million, driven by emissions of D/F compounds, naphthalene and PAHs from the scrap dryer/delacquering/decoating kiln. The estimated potential cancer incidence considering allowable emissions for both major and area sources is estimated to be 0.014 excess cancer cases per year, or 1 case every 70 years. Approximately 3,400 people were estimated to have cancer risks greater than or equal to 1-in-1 million considering allowable emissions from secondary aluminum plants. When considering MACT-allowable emissions, the maximum chronic non-cancer TOSHI value was estimated to be 0.1, driven by allowable emissions of HCl from the group 1 furnaces.

2. Acute Risk Results

Our screening analysis for worst-case acute impacts based on actual emissions indicates no pollutants exceeding an HQ value of 1 based upon the REL.

3. Multipathway Risk Screening Results

Results of the worst-case Tier 1 screening analysis indicate that 36 of the 52 major sources exceeded the PB–HAP emission cancer screening rates (based on estimates of actual emissions) for D/F, and 3 of the 52 major sources exceeded the Tier 1 screen value for PAHs. Regarding area sources, 60 of the 103 area sources exceeded the PB–HAP emission cancer screening rates (based on estimates of actual emissions) for D/F. For the compounds and facilities that did not screen out at Tier 1, we conducted a Tier 2 screen. The Tier 2 screen replaces some of the assumptions used in Tier 1 with site-specific data, including the location of fishable lakes and local precipitation, wind direction and speed. The Tier 2 screen continues to rely on high-end assumptions about consumption of local fish and locally grown or raised foods (adult female angler at 99th percentile consumption for fish[23] for the subsistence fisherman scenario and 90th percentile consumption for locally grown or raised foods[24] for the farmer scenario). It is important to note that, even with the inclusion of some site-specific information in the Tier 2 analysis, the multipathway screening analysis is still a very conservative, health-protective assessment (*e.g.,* upper-bound consumption of local fish and locally grown and/or raised foods) and in all likelihood will yield results that serve as an upper-bound multipathway risk associated with a facility.

While the screening analysis is not designed to produce a quantitative risk result, the factor by which the emissions exceed the threshold serves as a rough gauge of the ''upper-limit'' risks we would expect from a facility. Thus, for

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[23] Burger, J. 2002. *Daily Consumption of Wild Fish and Game: Exposures of High End Recreationists.* International Journal of Environmental Health Research 12:343–354.

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

example, if a facility emitted a PB–HAP carcinogen at a level 2 times the screening threshold, we can say with a high degree of confidence that the actual maximum cancer risks will be less than 2-in-1 million. Likewise, if a facility emitted a noncancer PB–HAP at a level 2 times the screening threshold, the maximum noncancer hazard would represent an HQ less than 2. The high degree of confidence comes from the fact that the screens are developed using the very conservative (health-protective) assumptions that we describe above.

Based on the Tier 2 cancer screening analysis, 25 of the 52 major sources and 34 of the 103 area sources emit D/F above the Tier 2 cancer screening thresholds for the subsistence fisher and farmer scenarios. The individual D/F emissions are all scaled based on their toxicity to 2,3,7,8-tetrachlorodibenzo-p-dioxin and reported as toxic equivalents (TEQs). The subsistence fisher scenario for the highest risk facilities exceeds the D/F cancer threshold by a factor of 80 for the major sources and by a factor of 70 for the area sources. The Tier 2 analysis also identifies 23 of the 52 major sources and 26 of the 103 area sources emitting D/F above the Tier 2 cancer screening thresholds for the subsistence farmer scenario. The highest exceedance of the Tier 2 screen value is 40 for the major sources and 20 for the area sources for the farmer scenario.

We have only one major source emitting PAHs above the Tier 2 cancer screen value with an exceedance of 2 for the farmer scenario. All PAH emissions are scaled based on their toxicity to benzo(a)pyrene and reported as TEQs.

A more refined Tier 3 multipathway screening analysis was conducted for six Tier 2 major source facilities. The six facilities were selected because the Tier 2 cancer screening assessments for these facilities had exceedances greater than or equal to 50 times the screen value for the subsistence fisher scenario. The major sources represented the highest screened cancer risk for multipathway impacts. Therefore, further screening analyses were not performed on the area sources. The Tier 3 screen examined the set of lakes from which the fisher might ingest fish. Any lakes that appeared to not be fishable or not publicly accessible were removed from the assessment, and the screening assessment was repeated. After we made the determination the critical lakes were fishable, we analyzed plume rise data for each of the sites. The Tier 3 screen was conducted only on those HAP that exceeded the Tier 2 screening threshold, which for this assessment were D/F and PAHs. Both of these PB–HAP are carcinogenic. The Tier 3 screen resulted in lowering the maximum exceedance of the screen value for the highest site from 80 to 70. Results for the other sites were all less than 70. The highest exceedance of the Tier 2 cancer screen value of 40 for the farmer scenario was also reduced in the Tier 3 screening assessment to a value of 30 for the major sources within this source category.

Overall, the refined multipathway screening analysis for D/F and PAHs utilizing the Tier 3 screen predicts a potential lifetime cancer risk of 70-in-1 million or lower to the most exposed individual, with D/F emissions from group 1 furnaces handling other than clean charge driving the risk. Cancer risks due to PAH emissions for the maximum exposed individual were less than 1-in-1 million.

The chronic non-cancer HQ is predicted to be below 1 for cadmium compounds and 1 for mercury compounds. For lead, we did not estimate any exceedances of the primary lead NAAQS.

Further details on the refined multipathway screening analysis can be found in Appendix 8 of the *Residual Risk Assessment for the Secondary Aluminum Production Source Category in Support of the 2014 Supplemental Proposal,* which is available in the docket.

4. Environmental Risk Screening Results

As described in section III.A of this document, we conducted an environmental risk screening assessment for the Secondary Aluminum Production source category for the following seven pollutants: PAHs, mercury (methyl mercury and mercuric chloride), cadmium, lead, D/F, HCl and HF.

Of the seven pollutants included in the environmental risk screen, major sources in this source category emit PAHs, mercuric chloride, cadmium, lead, D/F, HCl and HF. In the Tier 1 screening analysis for PB–HAP, none of the individual modeled concentrations for any facility in the source category exceeded any of the ecological benchmarks (either the LOAEL or NOAEL) for PAHs, mercuric chloride, cadmium and D/F. For lead, we did not estimate any exceedances of the secondary lead NAAQS. For HCl and HF, the average modeled concentration around each facility (*i.e.,* the average concentration of all off-site data points in the modeling domain) did not exceed any ecological benchmark. In addition, each individual modeled concentration of HCl and HF (*i.e.,* each off-site data point in the modeling domain) was below the ecological benchmarks for all facilities.

Of the seven pollutants included in the environmental risk screen, area sources in this source category are regulated only for D/F. In the Tier 1 screening analysis for D/F, none of the individual modeled concentrations for any facility in the source category exceeded any of the ecological benchmarks (either the LOAEL or NOAEL) for D/F.

5. Facility-Wide Risk Assessment Results

Considering facility-wide emissions at the 52 major sources, the MIR is estimated to be 70-in-1 million driven by arsenic and Ni emissions, and the chronic non-cancer TOSHI value is calculated to be 1 driven by emissions of cadmium compounds. The above risks are driven by emissions from the potline roof vents at the co-located primary aluminum production operations. The Secondary Aluminum Production source category represents less than 1 percent of the inhalation risks from the facility-wide assessment based upon actual emissions. Emissions from primary aluminum sources are being addressed in a separate action. Details regarding primary aluminum sources are available at *http://www.epa.gov/ttn/atw/alum/alumpg.html.*

6. What demographic groups might benefit from this regulation?

To determine whether or not to conduct a demographics analysis, which is an assessment of risks to individual demographic groups, we look at a combination of factors including the MIR, non-cancer TOSHI, population around the facilities in the source category and other relevant factors. For the Secondary Aluminum Production source category, inhalation risks were low with excess cancer risks being less than 1-in-1 million and non-cancer hazards being less than 1. Therefore, we did not conduct an assessment of risks to individual demographic groups for this rulemaking. However, we did conduct a proximity analysis for both area and major sources, which identifies any overrepresentation of minority, low income or indigenous populations near facilities in the source category. The results of the proximity analyses suggest there are a higher percent of minorities, people with low income, and people without a high school diploma living near these facilities (*i.e.,* within 3 miles) compared to the national averages for these subpopulations. However, as explained above, the risks due to HAP emissions from this source category are low for all populations (*e.g.,* inhalation cancer risks are less than 1-in-1 million for all populations and non-cancer hazard indices are less than 1). Furthermore, we do not expect this supplemental proposal to achieve reductions in HAP emissions. Therefore, we conclude that this supplemental proposal will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. However, this supplemental proposal, if finalized, will provide additional benefits to these demographic groups by improving the compliance, monitoring and implementation of the NESHAP.

The detailed results of the proximity analyses can be found in the *EJ Screening Report for Secondary Aluminum Area Sources* and the *EJ Screening Report for Secondary Aluminum Major Sources,* which are available in the docket for this rulemaking.

B. What are our proposed decisions regarding risk acceptability, ample margin of safety and adverse environmental effects based on our revised analyses?

1. Risk Acceptability

As noted in section II.A.1 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[25].'' (54 FR 38045, September 14, 1989).

In this proposal, the EPA estimated risks based on both actual and allowable emissions from secondary aluminum facilities. As discussed above, in determining acceptability, we considered risks based on both actual and allowable emissions.

a. Estimated Risks From Actual Emissions

The baseline inhalation cancer risk to the individual most exposed to emissions from the Secondary Aluminum Production source category is from major sources with cancer risks less than 1-in-1 million based on actual emissions. The total estimated incidence of cancer for this source category from both major and area sources due to inhalation exposures is 0.002 excess cancer cases per year, or 1 case in 500 years. The agency estimates that the maximum chronic non-cancer TOSHI from inhalation exposure for this source category is from major sources with an HI of 0.04 based on actual emissions, with HCl emissions from group 1 furnaces accounting for a large portion (99 percent) of the HI.

The multipathway screening analysis, based upon actual emissions, indicates the excess cancer risk from this source category is lower than 70-in-1 million with D/F emissions representing 99 percent of these potential risks based on the fisher scenario. The multipathway MIR cancer risks are the same for both the major and area sources within this source category for the fisher scenario. For the farmer scenario, the excess cancer risk is lower than 30-in-1 million for the major sources and 20-in-1 million for the area sources. There were no facilities within this source category having a multipathway non-cancer screen value greater than 1 for cadmium or mercury. In evaluating the potential for multipathway effects from emissions of lead, modeled maximum annual lead concentrations were compared to the secondary NAAQS for lead (0.15 µg/m^3). Results of this analysis estimate that the NAAQS for lead would not be exceeded at any off-site locations.

As noted above, the multipathway screens are conservative and incorporate many health-protective assumptions. For example, the EPA chooses inputs from the upper end of the range of possible values for the influential parameters used in the Tier 2 screen and assumes that the exposed individual for each scenario exhibits ingestion behavior that would lead to a high total exposure. A Tier 2 or 3 exceedance of a cancer or non-cancer screen value cannot be equated with an actual risk value or a HQ or HI. Rather, it represents a high-end estimate of what the risk or hazard may be. For example, a non-cancer screen value of 2 can be interpreted to mean that we have high confidence that the HI is lower than 2. Similarly, a cancer screen value of 30 for a carcinogen means that we have high confidence that the risk is lower than 30-in-1-million. Confidence comes from the conservative, or health-protective, assumptions that are used in the Tier 2 and Tier 3 screens. The Tier 3 screen improves the accuracy of the Tier 2 screen through validation of impacted lakes assessed and accounting for mass lost to the upper air sink, which reduces the uncertainty in the screen. The maximum Tier 3 exceedance of the cancer screen values for the secondary aluminum source category are 70 for the sustainable fisher scenario and 30 for the farmer scenario, both driven by D/F emissions from major sources.

The screening assessment of worst-case acute inhalation impacts from baseline actual emissions indicates no pollutants exceeding an HQ value of 1 based on the REL, with an estimated worst-case maximum acute HQ of 0.7 for HF based on the 1-hour REL.

b. Estimated Risks From Allowable Emissions

The EPA estimates that the inhalation cancer risk to the individual most exposed to emissions from the Secondary Aluminum Production source category is up to 4-in-1 million based on allowable emissions from major sources, with D/F, naphthalene and PAH emissions driving the risks. The EPA estimates that the incidence of cancer due to inhalation for the entire source category based on allowable emissions could be up to 0.014 excess cancer cases per year, or 1 case approximately every 70 years. About 3,400 people face an estimated increased cancer risk greater than or equal to 1-in-1 million due to inhalation exposure to allowable HAP emissions from this source category.

The risk assessment estimates that the maximum chronic non-cancer TOSHI from inhalation exposure values for the source category is up to 0.1 based on allowable emissions, driven by HCl emissions from major sources.

c. Acceptability Determination

In determining whether risks are acceptable for this source category, the EPA considered all available health information and risk estimation uncertainty as described above. As noted above, the agency estimated risk from actual and allowable emissions. While there are uncertainties associated with both the actual and allowable emissions, we consider the allowable emissions to be an upper bound, based on the conservative methods we used to calculate allowable emissions.

The risk results indicate that both the actual and allowable inhalation cancer risks to the individual most exposed are up to but no greater than approximately 4-in-1 million, based on allowable emissions which is considerably less than 100-in-1 million, the presumptive limit of acceptability. The MIR based on actual emissions is 0.6-in-1 million, well below the presumptive limit as well. The maximum chronic non-cancer hazard indices for both the actual and allowable inhalation non-cancer risks to the individual most exposed are less than 1. The maximum individual non-cancer HI is 0.04 based on actual

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[25] 1-in-10 thousand is equivalent to 100-in-1 million. The EPA currently describes cancer risks as ''n-in-1 million.''

emissions and 0.1 based on allowable emissions.

The maximum acute non-cancer HQ for all pollutants was below 1, with a maximum value of 0.7 based on the REL for hydrofluoric acid. The excess cancer risks from the multipathway screen from actual D/F and PAH emissions from major and area sources indicate that the risk to the individual most exposed could be up to, but no greater than, 70-in-1 million for the fisher scenario and 30-in-1 million for the farmer scenario. These results are less than 100-in-1 million, which is the presumptive limit of acceptability. The multipathway Tier 2 screen for non-cancer is at 1 for mercury and cadmium.

The multipathway screens are based on model runs that use upper end values for influential parameters and we assume that the exposed individual exhibits ingestion behavior that would lead to a high total exposure. The multipathway screens also include some hypothetical elements, namely the existence and location of the hypothetical farmer and fisher.

Considering all of the health risk information and factors discussed above, including the uncertainties discussed in section III.A.8 of this preamble, the EPA proposes that the risks at baseline are acceptable since the cancer risks are below the presumptive limit of acceptability and the non-cancer results indicate there is minimal likelihood of adverse non-cancer health effects due to HAP emissions from this source category.

2. Ample Margin of Safety Analysis

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 in this source category to further reduce the risks (or potential risks) due to emissions of HAP identified in our risk assessment, along with all of the health risks and other health information considered in the risk acceptability determination described above. In this analysis, we considered the results of the technology review, risk assessment and other aspects of our MACT rule review to determine whether there are any cost-effective controls or other measures that would reduce emissions further to provide an ample margin of safety with respect to the risks associated with these emissions.

Our inhalation risk analysis indicated very low potential for risk from the facilities in the source category, and, therefore, very little inhalation risk reductions could be realized regardless of the availability of control options. Our technology review, which was conducted for the 2012 proposal and is in large part applicable to this supplemental proposal (see section IV.C below for more discussion of the technology review), did not identify any new practices, controls or process options that are being used in this industry or in other industries that would be cost effective for further reduction of these emissions and risks.

Our multipathway screening analysis results for the 2012 proposal indicated exceedances of the worst-case screening levels which did not necessarily indicate any risks. However, they did suggest a potential for risks. For this supplemental proposal, a more refined multipathway screening analysis was conducted, including a Tier 3 screen for the top six major source facilities for cancer. The more refined screening analysis was conducted only on those PB–HAP that exceeded the screening threshold, which for this assessment were PAHs and D/F. The refined multipathway screening analysis showed that the earlier screening analysis for the 2012 proposal over-predicted the potential cancer risk when compared to the refined analysis for three of the six facilities assessed, with emissions of D/F driving these cancer risks. The remaining facilities had the same cancer screen value in the refined analysis as in the earlier screening results when rounded to 1 significant figure. The cancer risks due to PAH emissions were less than 1-in-1 million based on the refined analysis.

To evaluate the potential to reduce D/F emissions and risks, as part of our revised ample margin of safety analysis, we used the same analysis that we conducted for the 2012 proposal except that we incorporated more recent D/F emissions data and control cost information. As in the analysis conducted for the 2012 proposal, we evaluated two control options. Option 1 considered lowering the existing D/F emissions limit from 15 to 10 µg TEQ/Mg feed for all group 1 furnaces processing other than clean charge. Option 2 considered lowering the existing D/F limit for group 1 furnaces processing other than clean charge after applying a subcategorization based on facility production capacity. An emission reduction to 10 µg TEQ/Mg represents a level that could potentially be met with an activated carbon injection system. With regard to the option of lowering the D/F emission limit to 10 µg TEQ/Mg feed for group 1 furnaces handling other than clean charge, we estimate that about 12 furnaces at eight facilities would need to reduce their D/F emissions and that the total capital costs would be $390,000 with total annualized costs of $1.4 million. This option would achieve an estimated 0.49 grams TEQ reduction of D/F emissions with an overall cost effectiveness of about $2.9 million per gram D/F TEQ. For the second option, facilities with group 1 furnace production capacity greater than 200,000 tpy (melting other than clean charge) would be required to meet a limit of 10 µg TEQ/Mg limit. For this option, we estimate that 4 furnaces at two facilities would be required to reduce their D/F emissions. We estimate that the total capital costs would be $130,000 with total annualized costs of $460,000. This option would achieve an estimated 0.12 grams TEQ reduction of D/F emissions with an overall cost-effectiveness of about $3.8 million per gram D/F TEQ. As we concluded in the ample margin of safety analysis for the 2012 proposal, our analysis indicates that these options would result in very little emission reductions (0.49 grams TEQ of D/F for Option 1 and 0.12 grams TEQ of D/F reductions for Option 2) and, therefore, would result in little or no changes to the potential risk levels. After considering the costs and the level of reductions that would be achieved, we have decided, as we did in the 2012 proposal, not to propose any of these options. For more information on this analysis, see the *Supplemental Proposal Technical Support Document for the Secondary Aluminum Production Source Category,* which is available in the public docket for this proposed rulemaking.

In the 2012 proposal, we also evaluated possible options based on work practices to achieve further emission reductions. The current subpart RRR NESHAP includes work practices to minimize D/F emissions which include scrap inspection, limitations on materials processed by group 2 furnaces, temperature and residence time requirements for afterburners controlling sweat furnaces, labeling requirements, capture/collection requirements and requirements for an operations, maintenance and monitoring plan that contains details on the proper operation and maintenance of processes and control equipment. For the 2012 proposal, we searched for and evaluated other possible work practices such as good combustion practices, better scrap inspection and cleaning, and process monitoring. However, none of these potential work practices were determined to be feasible and effective in further reducing D/F emissions for this source category. Thus, we did not identify any feasible or applicable work practices for this industry beyond those that are currently in the MACT rule. Therefore, in the 2012 proposal we did not propose any additional work practices. Since the 2012 proposal, we have not identified any changes in the sources of emissions, the types of pollutants emitted or the work practices available to be used in the secondary aluminum production industry. Therefore, as in the 2012 proposal, we are not proposing any revisions to subpart RRR based on work practices. Further details on work practices and control options are provided in the *Supplemental Proposal Technology Review for the Secondary Aluminum Production Source Category,* which is available in the public docket for this rulemaking.

In accordance with the approach established in the Benzene NESHAP, we weighed all health risk information and factors considered in the risk acceptability determination, including uncertainties, along with the cost and feasibility of control technologies and other measures that could be applied in this source category, in making our ample margin of safety determination. In summary, our risk analysis indicated very low potential for risk, and we identified no developments in technology that would be cost effective in reducing HAP emissions relative to reductions already being achieved. We also did not identify any cost effective approaches to further reduce D/F emissions and multipathway risk beyond what is already being achieved by the current NESHAP.

Because of the high cost associated with the use of activated carbon injection systems and because work practices are already required to help ensure low emissions, and in light of the considerations discussed above, we propose that the existing MACT standards provide an ample margin of safety to protect public health.

3. Adverse Environmental Effects

Based on the results of our environmental risk screening assessment, we conclude that there is not an adverse environmental effect as a result of HAP emissions from the Secondary Aluminum Production source category. 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.

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

A technology review was conducted for the Secondary Aluminum Production source category and is described in the 2012 proposal at 77 FR 8596, February 14, 2012. Details of the technology review and its findings are available in the memorandum, *Draft Technology Review for the Secondary Aluminum Production Source Category* (Docket item EPA–HQ–OAR–2010–0544–0144). The typical controls used to minimize emissions at secondary aluminum facilities include fabric filters for control of PM from aluminum scrap shredders; afterburners for control of THC and D/F from thermal chip dryers; afterburners plus lime-injected fabric filters for control of PM, HCl, THC and D/F from scrap dryers/delacquering kilns/decoating kilns; afterburners for control of D/F from sweat furnaces; fabric filters for control of PM from dross-only furnaces and rotary dross coolers; lime-injected fabric filters for control of PM and HCl from in-line fluxers; and lime-injected fabric filters for control of PM, HCl and D/F from group 1 furnaces. In our review of technology, we determined that there have been some developments in practices, processes or control technologies that have been implemented in this source category since promulgation of the current NESHAP. We stated in the 2012 proposal that these findings did not warrant any changes to subpart RRR. Following the 2012 proposal, no public comments were received that would alter the conclusions of our technology review for the Secondary Aluminum Production source category. Therefore, for this supplemental proposal, we are proposing that the technology review findings are still valid. The EPA is not aware of any changes in technology development since the 2012 proposal.

As part of the technology review for the 2012 proposal, we also evaluated other technologies that have the potential to reduce HAP emissions, in particular emissions of D/F. See *Draft Technical Support Document for the Secondary Aluminum Production Source Category,* Docket item EPA–HQ–OAR–2010–0544–0152. We have updated that analysis for this supplemental proposal. See *Supplemental Proposal Technical Support Document for the Secondary Aluminum Production Source Category* and the *Supplemental Proposal Technology Review for the Secondary Aluminum Production Source Category,* which are available in the public docket for this rulemaking. Under this analysis, we evaluated the same approaches that were evaluated under the ample margin of safety analysis described in section IV.B of this document. We evaluated the option of lowering the existing D/F limit from 15 to 10 µg TEQ/Mg feed for group 1 furnaces processing other than clean charge either at all secondary aluminum facilities or only at larger secondary aluminum facilities based on facility production capacity. The lower D/F emissions limits potentially could be met by using an activated carbon injection system. Using updated information on emissions and control costs, we estimate that about 12 furnaces at eight facilities would need to reduce their D/F emissions to meet the 10 µg TEQ/Mg feed for group 1 furnaces and that the total capital costs would be $390,000 with total annualized costs of $1.4 million. This option would achieve an estimated 0.49 grams TEQ reduction of D/F emissions with an overall cost effectiveness of about $2.9 million per gram D/F TEQ. For the second option, only facilities with group 1 furnace production capacity greater than 200,000 tpy (melting other than clean charge) would be required to meet the lower 10 µg TEQ/Mg limit. For this option, we estimate that four furnaces at two facilities would be required to reduce their D/F emissions. We estimate that the total capital cost would be $130,000 with total annualized costs of $460,000. This option would achieve an estimated 0.12 grams TEQ reduction of D/F emissions with an estimated overall cost effectiveness of $3.8 million per gram D/F TEQ. (The details of this analysis are in the *Supplemental Proposal Technical Support Document for the Secondary Aluminum Production Source Category,* which is available in the public docket for this rulemaking. After considering the costs and the small emission reductions that would be achieved, we have decided not to propose any of these options.

D. What other actions are we proposing?

In the 2012 proposal, we proposed amendments to correct and clarify existing requirements in subpart RRR. In this supplemental proposal, we are proposing revisions to certain rule corrections and clarifications that were in the 2012 proposal as well as proposing alternative compliance options to the operating and monitoring requirements for sweat furnaces. On these limited revisions, we are soliciting comment. As discussed above, the 2012 proposal also contained other proposed rule corrections and clarifications for which we are not proposing any changes in this document, and, therefore, for which we are not seeking public comment (if EPA nonetheless were to receive any such comments, the comments would be outside the scope of this supplemental proposal and would not be considered).

1. Changing Furnace Classification

In the 2012 proposal, we proposed to address an area of uncertainty under subpart RRR by specifying in 40 CFR 63.1514 rule provisions expressly allowing changes in furnace classification, subject to procedural and testing requirements, operating requirements and recordkeeping requirements. We proposed a frequency limit of no more than one change in classification (and associated reversion) every six months, with an exception for planned control device maintenance activities requiring shutdown. We received comments on the 2012 proposal requesting additional or unlimited changes in furnace classification. Based on the information received, we reevaluated the appropriate limit on frequency of furnace classification changes. The EPA received from one commenter an inventory of the number of classification changes that occurred each year at a specific subpart RRR furnace over a nearly 10-year period (available in the docket for this rulemaking). The highest number of furnace classification changes in one year, including both planned and unplanned changes, was nine.

Based on the comments and information received and because of the potential difficulty in distinguishing between a planned and unplanned change in classification, we are proposing and requesting comments on a revised limit on the frequency of changes in furnace classification of four (including the four associated reversions) in any 6-month period, including both planned and unplanned changes in classification, with a provision allowing additional changes by petitioning the permitting authority for major sources, or the Administrator for area sources. These revisions in proposed 40 CFR 63.1514(e) would balance the interest in allowing industry to make furnace classification changes while preserving the EPA's and delegated authorities' practical and effective enforcement of the emission limitations, work practice standards and other requirements of subpart RRR. We request that any commenter who would like the EPA to consider a different limit on frequency to include a specific rationale and factual basis for why a different frequency would be appropriate as well as any data on historical frequencies of furnace classification changes under subpart RRR.

We are specifically requesting comments on the revised proposed provisions in 40 CFR 63.1514(e), which addresses the frequency of changing furnace classification. No substantive changes have been made to the other proposed provisions in 40 CFR 63.1514, and we are not requesting comments on any other aspect of the proposed provisions for furnace classification changes. We will address the comments previously received on the 2012 proposal, as well as comments that are received in response to the revised proposed frequency limit in this document, when we take final rulemaking action.

2. Worst Case Scenario Testing

In the 2012 proposal, we proposed amendments to clarify that performance tests under multiple scenarios may be required in order to reflect the emissions ranges for each regulated pollutant. We received comments on the 2012 proposal that the worst case charge materials, and blends of these, have differing process rates and, therefore, the charge rate from the stack tests is not representative of the charge rate that will be achieved during normal operations. Based on the comments received and recognizing that it may be necessary to conduct performance tests under one or multiple scenarios to be representative of the range of normal operating conditions, we are proposing revised language in 40 CFR 63.1511(b)(1) to clarify the conditions under which subpart RRR performance tests must be conducted. The intention in the subpart RRR rule is to require testing under ''worst case'' conditions from the standpoint of emissions and to establish parameters based on such testing that ensure compliance under all operating conditions. For example, in a response to comments on the original proposed subpart RRR rule regarding the inlet temperature requirement for fabric filters, the EPA stated that testing under worst case conditions, such as higher than normal fabric filter inlet temperatures, could provide a larger temperature operating range, which would be used to monitor and ensure continuous compliance between periodic performance tests (65 FR 15699, March 23, 2000). In the EPA response-to-comments document (*Summary of Public Comments and Responses on Secondary Aluminum NESHAP,* December 14, 1999, Docket No. A–92–61, item V–C–1, comment 4.1.47), the EPA explained that requiring multiple tests over a range of different furnace operating conditions will show that the selected monitoring parameters are valid indicators of emissions and that it may not be possible for a single test to be representative of worst case conditions and that more than a single test may be required. It is not permissible, for example, to demonstrate compliance while processing relatively uncontaminated scrap, and then at a later time, when the supply of this scrap is constrained, process more heavily contaminated scrap, without demonstrating compliance under these conditions based on previous emissions testing or on new emissions testing if previous tests would not be representative of the emissions from the processing of the more heavily contaminated scrap.

To clarify the requirements for testing, we are proposing that performance tests be conducted under representative (normal) conditions expected to produce the highest level of HAP emissions expressed in the units of the emission standards for the HAP (considering the extent of scrap contamination, reactive flux addition rate and feed/charge rate). If a single test condition is not expected to produce the highest level of emissions for all HAP, testing under two or more sets of conditions (for example high contamination at low feed/charge rate and low contamination at high feed/charge rate) may be required. Any subsequent performance tests for the purposes of establishing new or revised parametric limits shall be allowed upon pre-approval from the permitting authority for major sources or the Administrator for area sources. These new parametric settings shall be used to demonstrate compliance for the period being tested. We solicit comment on whether the proposed amendment adequately addresses and clarifies the requirement that multiple tests may be necessary to represent different operational conditions.

3. Testing of Uncontrolled Furnaces

As explained in the 2012 proposal, while subpart RRR specifies capture and collection requirements for emission units that are equipped with add-on air pollution control devices, there are no such requirements for furnaces that are not equipped with an add-on air pollution control device. To clarify how uncontrolled sources are to be tested for compliance, in 2012 we proposed compliance alternatives for uncontrolled affected sources. Specifically, in 2012 we proposed either the installation of ACGIH hooding or an assumption of 67-percent capture efficiency for furnace exhaust (*i.e.,* multiply emissions measured at the furnace exhaust outlet by 1.5 to calculate the total estimated emissions from the furnace). Under the 2012 proposed provisions, if the source fails to demonstrate compliance using the 67-percent capture efficiency assumption, the source would have to retest using hooding that meets ACGIH guidelines or petition the permitting authority for major sources, or the Administrator for area sources, that such hoods are impractical and propose alternative testing procedures that will minimize unmeasured fugitive emissions. In the 2012 proposal, we proposed that the retesting would need to occur within 90 days.

We received comments that the EPA was proposing to mandate ACGIH hooding during performance testing for uncontrolled furnaces. Commenters also provided information that ACGIH-compliant hoods are not possible to install on round top furnaces.

Based on the comments received and our consideration of specific testing scenarios and types of uncontrolled furnaces, we are proposing revised requirements for the testing of uncontrolled furnaces. In this supplemental proposal, we are proposing that if the source fails to demonstrate compliance by the uncontrolled furnace using the 67-percent capture efficiency assumption proposed in the 2012 proposal, then they must retest using ACGIH hooding within 180 days (rather than the 90 days specified in the 2012 proposal), or the source can petition the appropriate authority within 180 days that such hoods are impracticable and propose alternative testing procedures to minimize emissions. No time constraints on petitioning the appropriate authority were specified in the 2012 proposal. In this supplemental proposal, we are also proposing to clarify situations and circumstances whereby installation of hooding according to ACGIH guidelines would be considered impractical and are adding examples of procedures for minimizing fugitive emissions during testing for such situations and circumstances. The EPA is proposing conditions that would be considered impractical to install hooding according to ACGIH guidelines. The EPA is also proposing alternative procedures to minimize fugitive emissions in the event that ACGIH-compliant hooding cannot be installed. These alternative procedures are described in more detail below.

Comments on the 2012 proposal also contained information regarding the feasibility of installing ACGIH-compliant hooding on certain furnace types in preparation for testing. Based on our review of the information submitted by the commenters, we agree that it is not possible to install ACGIH-compliant hoods on round top furnaces for testing because the top of the furnace would have to be removed by a crane operating above the furnace. We also agree that case-by-case impracticability determinations are not necessary for round top furnaces. Consequently, we are proposing that existing round top furnaces be excluded from the proposed requirement either to install ACGIH-compliant hooding or to use a 67-percent capture efficiency, as well as from the proposed requirement that a petition of impracticality be submitted to the appropriate authority. Instead, we propose that round top furnaces must be operated to minimize fugitive emissions during testing. We have not received any documentation to support requests by commenters to exclude other types of furnaces such as box reverberatory furnaces and box reverberatory furnaces with a side door. Therefore, we have not proposed to exclude them, but we are prepared to evaluate any comments submitted regarding impracticality and other types of furnaces and, most importantly, supporting documentation that we may receive from commenters.

Under this supplemental proposal, owners or operators of uncontrolled furnaces, including round top furnaces, who petition the appropriate authority that it is impractical to install ACGIH-compliant hooding would be required to minimize fugitive emissions from such furnaces during testing. In response to commenters' requests, we are proposing example procedures that can be used to minimize unmeasured fugitive emissions during testing. These procedures may include, if practical, one or more of the following, but are not limited to:

- Installing a hood that does not entirely meet ACGIH guidelines;
- Using the building as an enclosure and measuring emissions exhausted from the building if there are no other furnaces or other significant sources in the building of the pollutants to be measured;
- Installing temporary baffles on the sides or top of the furnace opening, if it is practical to do so where they will not interfere with material handling or with the furnace door opening and closing;
- Increasing the exhaust rate from the furnace from furnaces with draft fans, so as to capture emissions that might otherwise escape into the building;
- Minimizing the time the furnace doors are open or the top is off;
- Delaying gaseous reactive fluxing until charging doors are closed or the top is on;
- Agitating or stirring molten metal as soon as practicable after salt flux addition and closing doors as soon as possible after solid fluxing operations, including mixing and dross removal;
- Keeping building doors and other openings closed to the greatest extent possible to minimize drafts that would divert emissions from being drawn into the furnace; and
- Maintaining burners on low-fire or pilot operation while the doors are open or the top is off.

We are also proposing revised amendments to clarify in what circumstances installation of temporary capture hoods for testing would be considered impractical. We are proposing that temporary capture hooding installation would be considered impractical if:

- Building or equipment obstructions (for example, wall, ceiling, roof, structural beams, utilities, overhead crane or other) are present such that the temporary hood cannot be located consistent with acceptable hood design and installation practices;
- Space limitations or work area constraints exist such that the temporary hood cannot be supported or located to prevent interference with normal furnace operations or avoid unsafe working conditions for the furnace operator; or
- Other obstructions and limitations subject to agreement by the permitting authority for major sources, or the Administrator for area sources.

We invite comments and solicit information on certain aspects of the proposed compliance provisions for testing of uncontrolled furnaces. Specifically, we are soliciting comments and information on the requirements in this supplemental proposal that specify the types of obstacles and limitations that can be used to show that testing using ACGIH-compliant hooding is impractical, the procedures that can be implemented to minimize unmeasured fugitive emissions during testing, and the exemption of existing round top furnaces from the requirements to test using ACGIH-compliant hooding or apply the 67-percent capture efficiency assumption. We are not soliciting comment on any other element of the provisions proposed in the 2012 proposal regarding testing of uncontrolled furnaces.

4. Annual Inspections of Capture/Collection Systems

In the 2012 proposal, we proposed codifying in subpart RRR our existing interpretation that annual hood inspections include flow rate measurements using EPA Reference Methods 1 and 2 in Appendix A to 40 CFR part 60. These flow rate measurements supplement the effectiveness of the required visual inspection for leaks, to reveal the presence of obstructions in the ductwork, confirm that fan efficiency has not declined and provide a measured value for air flow. Commenters requested that the EPA allow flexibility in the methods used to complete the annual inspections of capture/collection systems stating that the use of volumetric flow measurement was often not necessary and Method 1 and 2 tests could be a cost burden for some facilities. Comments also indicated that routine, but less frequent, flow rate measurements could ensure that capture/collection systems are operated properly and suggested alternative methods of ensuring the efficiency of capture/collection systems.

Based on the comments received and our consideration of inspection needs, the EPA is proposing additional options that provide more flexibility in how affected sources can verify the efficiency of their capture/collection system. Instead of annual Methods 1 and 2 testing, we propose that sources may choose to perform flow rate measurements using EPA Methods 1 and 2 once every 5 years provided that a flow rate indicator consisting of a pitot tube and differential pressure gauge is installed and used to record daily the differential pressure and to ensure that the differential pressure is maintained at or above 90 percent of the pressure differential measured during the most recent Method 2 performance test series, and that the flow rate indicator is inspected annually. As another option to annual flow rate measurements using Methods 1 and 2, the EPA is proposing to allow Methods 1 and 2 testing to be performed every 5 years provided that daily measurements of the revolutions per minute (RPM) of the capture and collection system's fan are taken, the readings are recorded daily and the fan RPM is maintained at or above 90 percent of the RPM measured during the most recent Method 2 performance test. Further, we are proposing that as an alternative to the flow rate measurements using Methods 1 and 2, the annual hood inspection requirements can be satisfied by conducting annual verification of a permanent total enclosure using EPA Method 204. We are further proposing that as an alternative to the annual verification of a permanent total enclosure using EPA Method 204, verification can be performed once every 5 years if negative pressure in the enclosure is directly monitored by a pressure indicator and readings are recorded daily or the system is interlocked to halt material feed should the system not operate under negative pressure. In this supplemental proposal, we are also proposing that readings outside a specified range would need to be investigated and steps taken to restore normal operation, and that pressure indicators would need to be inspected annually for damage and operability.

5. Sweat Furnace Operating and Monitoring Requirements

We are also proposing to amend 40 CFR 63.1506(c) and 63.1510(d) to provide sweat furnaces with alternative compliance options to the ACGIH Guidelines and the required annual flow rate measurements using EPA Methods 1 and 2. We are proposing that in lieu of meeting the ACGIH guidelines for capture and collection and the annual flow rate measurements using Methods 1 and 2, sweat furnaces may comply by demonstrating negative air flow into or towards the sweat furnace opening as well as operating and maintaining the sweat furnace in such a way that minimizes fugitive emissions.

6. Startup, Shutdown, Malfunction and the Malfunction Affirmative Defense

In the 2012 proposal, we proposed to eliminate provisions that exempt sources from the requirement to comply with the otherwise applicable CAA section 112(d) emission standards during periods of Startup, Shutdown and Malfunction (SSM). We explained in the 2012 proposal that because the scrap processed at secondary aluminum production facilities is the source of emissions, we expect emissions during startup and shutdown would be no higher, and most likely would be significantly lower, than emissions during normal operations since no scrap is processed during those periods. We stated that we knew of no reason why the existing standards should not apply at all times. For production processes in the Secondary Aluminum Production source category where the standards are expressed in units of pounds per ton of feed or similar units (*i.e.,* thermal chip dyers, scrap dryer/delacquering kiln/decoating kilns, dross-only furnaces, in-line fluxers using reactive flux and group 1 furnaces), the 2012 proposal included a method for demonstrating compliance with those limits based on emissions measured during startup and shutdown.

Because conducting meaningful testing during periods of startup and shutdown can be problematic, in this supplemental proposal we are proposing an additional method that can be used to demonstrate compliance with production based emission limits during periods of startup and shutdown. Together, these proposed compliance provisions for periods of startup and shutdown better reflect the MACT requirement for those periods. Recognizing that the source of HAP emissions is the processing of scrap and the use of fluxes during processing and that the heat for processing in the Secondary Aluminum Production source category is generated exclusively by use of clean fuels—natural gas, propane or electricity—we are proposing that compliance with emission standards during startup and shutdown can be demonstrated by keeping records that show that the feed/charge rate was zero, the flux rate was zero and the affected source or emission unit either was heated with electricity, propane or natural gas as the sole sources of heat or was not heated (see proposed section 63.1513(f)). We are also proposing that the following records be kept: The date and time of each startup and shutdown, the quantity of feed/charge and flux introduced during each startup and shutdown and the types of fuel used to heat the unit during startup and shutdown.

We are also proposing to define periods of startup and shutdown. For the purposes of subpart RRR, startup means ''the period of operation for thermal chip dryers, scrap dryers/delacquering kilns, decoating kilns, dross-only furnaces, group 1 furnaces, in-line fluxers, sweat furnaces and group 2 furnaces that begins with equipment warming from a cold start or a complete shutdown. Startup ends at the point that feed/charge is introduced.'' Shutdown means the period of operation for thermal chip dryers, scrap dryers/delacquering kilns, decoating kilns, dross-only furnaces, group 1 furnaces, in-line fluxers, sweat furnaces and group 2 furnaces that begins when the introduction of feed/charge is halted and all product has been removed from the emission unit (*e.g.,* by tapping a furnace).''

We solicit comments and additional information related to the proposed definitions of startup and shutdown, as well as the additional option proposed in this supplemental proposal for demonstrating compliance during periods of startup and shutdown based on the presence (or absence) in the furnace of feed/charge or fluxing, and the type of combustion fuels or the absence of combustion fuels. We are also proposing to move the requirements for compliance demonstration during startup and shutdown from the emission standards section (section 63.1505), where they were in the 2012 proposal, to the more appropriate compliance demonstration section (section 63.1513). However, we are not soliciting comments on the compliance demonstration method for periods of startup and shutdown that was presented in the 2012 proposal.

In the 2012 proposal, we proposed to eliminate provisions that exempt sources from the requirement to comply with the otherwise applicable CAA section 112(d) emission standards during periods of SSM. We also included provisions for affirmative defense to civil penalties for violations of emission standards caused by malfunctions. 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. As explained in the 2012 proposal (77 FR 8598), 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. Under section 112, emissions standards for new sources must be no less stringent than the level ''achieved'' by the best controlled similar source and for existing sources generally must be no less stringent than the average emission limitation ''achieved'' by the best performing 12 percent of sources in the category. There is nothing in 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 United States Court of Appeals for the District of Columbia Circuit 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 section 112 requires the agency to consider malfunctions as part of that analysis. A malfunction should not be treated 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 section 112 standards.

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

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

If the EPA determines in a particular case that 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, section 112 is reasonable and encourages practices that will avoid malfunctions. Administrative and judicial procedures for addressing exceedances of the standards fully recognize that violations may occur despite good faith efforts to comply and can accommodate those situations.

As noted above, the 2012 proposal included an affirmative defense to civil penalties for violations caused by malfunctions. The EPA included the affirmative defense in the 2012 proposal as it had in several prior rules in an effort to create a system that incorporates some flexibility, recognizing that there is a tension, inherent in many types of air regulation, to ensure adequate compliance while simultaneously recognizing that despite the most diligent of efforts, emission standards may be violated under circumstances entirely beyond the control of the source. Although the EPA recognized that its case-by-case enforcement discretion provides sufficient flexibility in these circumstances, it included the affirmative defense in the 2012 proposal and in several prior rules to provide a more formalized approach and more regulatory clarity. See *Weyerhaeuser Co.* v. *Costle,* 590 F.2d 1011, 1057–58 (D.C. Cir. 1978) (holding that an informal case-by-case enforcement discretion approach is adequate); but see *Marathon Oil Co.* v. *EPA,* 564 F.2d 1253, 1272–73 (9th Cir. 1977) (requiring a more formalized approach to consideration of ''upsets beyond the control of the permit holder.''). Under the EPA's regulatory affirmative defense provisions, if a source could demonstrate in a judicial or administrative proceeding that it had met the requirements of the affirmative defense in the regulation, civil penalties would not be assessed. The United States Court of Appeals for the District of Columbia Circuit vacated an affirmative defense in one of the EPA's section 112(d) regulations. *NRDC* v. *EPA,* 749 F.3d 1055 (D.C. Cir. 2014) (vacating affirmative defense provisions in section 112 rule establishing emission standards for Portland cement kilns). The court found that the EPA lacked authority to establish an affirmative defense for private civil suits and held that under the CAA, the authority to determine civil penalty amounts in such cases lies exclusively with the courts, not the EPA. Specifically, the court found: ''As the language of the statute makes clear, the courts determine, on a case-by-case basis, whether civil penalties are 'appropriate.' '' See *NRDC* v. *EPA,* 749 F.3d 1055, 1063 (D.C. Cir. 2014) (''[U]nder this statute, deciding whether penalties are 'appropriate' in a given private civil suit is a job for the courts, not for EPA.''). In light of NRDC, the EPA is withdrawing its proposal to include a regulatory affirmative defense provision in this rulemaking and in this supplementary proposal has eliminated section 63.1520 (the provision that established the affirmative defense in the proposed rule published in the **Federal Register** on February 14, 2012 (77 FR 8576)). As explained above, if a source is unable to comply with emissions standards as a result of a malfunction, the EPA may use its case-by-case enforcement discretion to provide flexibility, as appropriate. Further, as the D.C. Circuit recognized, in an EPA or citizen enforcement action, the court has the discretion to consider any defense raised and determine whether penalties are appropriate. Cf. *NRDC* v. *EPA,* 749 F.3d 1055, 1064 (D.C. Cir. 2014) (arguments that violation were caused by unavoidable technology failure can be made to the courts in future civil cases when the issue arises). The same logic applies to EPA administrative enforcement actions.

E. What compliance dates are we proposing?

In the 2012 proposal, the EPA proposed that owners or operators of existing affected sources comply with the proposed amendments within 90 days of the publication of the final rule in the **Federal Register**. Commenters stated that the proposed 90 day compliance deadline was insufficient for sources to comply with certain provisions of the final rule. They maintained that the rule changes would require operational planning, maintenance planning, reprogramming of data acquisition systems, design and installation of hooding equipment and/or negotiations with permitting authorities to gain performance test plan approvals (with provisions to minimize fugitive emissions during testing in place of capture hoods). They pointed out that facilities that choose to design and install capture hoods for performance testing will need time to design and complete these installations, conduct initial performance testing and modify their operations, charge materials and/or products to ensure compliance. Some rule changes, furnace switching, HF testing and testing uncontrolled furnaces for example, would require revisions to operation, maintenance and monitoring (OM&M) plans as well as to permits to include newly established operating parameters in cases where changes to furnace classifications are made. Commenters stated that compliance with HF emission standards that may affect choice of flux materials, daily calculation of HF emissions and compliance with SAPU limit that will require reprogramming of data systems to include HF and/or fluoride containing flux composition data would also require time to be researched, selected, purchased, financed and installed. Commenters suggested compliance deadlines ranging from 2 to 3 years.

The EPA agrees with commenters that the proposed 90-day compliance deadline is insufficient for sources to comply with certain provisions of the final rule and is proposing extended compliance periods. The EPA is proposing a 180-day compliance period for the revisions listed in section 63.1501(d). For the amendments to include HF emissions (in section 63.1505(i)(4) and (k)(2)), the testing of existing uncontrolled furnaces (sections 63.1512(e)(4), (e)(5), (e)(6) and (e)(7)), and changing furnace classification (section 63.1514), the EPA agrees that a longer compliance period is required and is proposing a compliance date of 2 years after promulgation.

V. Summary of the Revised Cost, Environmental and Economic Impacts

A. What are the affected sources?

We estimate that there are 161 secondary aluminum production facilities that will be affected by this proposed rule. We performed risk modeling for 155 of these sources (52 of the 53 major sources and 103 of the 108 area sources). There were six facilities that are subject to the Secondary Aluminum NESHAP that were not included in the risk assessment input modeling files. The facilities that were not included in the risk assessment input files included one major HAP source and five area HAP sources. The major HAP source was not included because the secondary aluminum equipment at the source consists of group 2 furnaces, for which the EPA did not have HAP emissions estimates. The five area sources were not included because they had no equipment subject to D/F emission standards, which are the only standards in the NESHAP applicable to area sources. We estimate that nine secondary aluminum facilities have co-located primary aluminum operations. The affected sources at secondary aluminum production facilities include new and existing scrap shredders, thermal chip dryers, scrap dryer/delacquering kiln/decoating kilns, group 2 furnaces, sweat furnaces, dross-only furnaces, rotary dross cooler and secondary aluminum processing units containing group 1 furnaces and in-line fluxers.

B. What are the air quality impacts?

No changes are being proposed to numerical emissions limits. This supplemental proposal affects the number of times that a furnace can switch operating modes, clarifies how uncontrolled furnaces are to conduct emissions testing, extends the compliance deadline, revises the monitoring requirements for annual inspection of capture/collection systems, clarifies the requirements for conducting performance testing under worst case conditions and provides monitoring alternatives for sweat furnaces. These proposed amendments would not have any appreciable effect on emissions or result in emission reductions, although the proposed requirements for testing uncontrolled furnaces could result in some unquantifiable emission reduction. Therefore, no quantifiable air quality impacts are expected. However, these proposed amendments will help to improve compliance, monitoring and implementation of the rule.

C. What are the cost impacts?

We conservatively estimate the total cost of the proposed amendments to be $1,711,000 per year (in 2011 dollars). However, depending on assumptions used for the costs for installing temporary hooding for uncontrolled furnaces, the estimate of total annualized costs could range from $611,000 to $2,871,000 per year.

Our estimate for the source category includes an annualized cost of $1,200,000 to $3,460,000 for installing hooding that meets ACGIH guidelines for testing uncontrolled furnaces, assuming that 107 furnaces choose that option (rather than assuming a 67-percent capture efficiency for their existing furnace exhaust system). We believe that a number of these 107 furnaces will choose to apply the 67-percent assumption rather than install hooding. Therefore, these total cost estimates are considered conservative (more likely to be overestimates rather than underestimates) of the total costs to the industry. Our estimates of total costs also include an annualized cost of $11,000 for testing for HF on uncontrolled furnaces that are already testing for HCl. Finally, we estimate cost savings of $600,000 per year for furnaces that change furnace operating modes and turn off their control devices. Our estimate of savings is based on 50 furnaces turning off their controls for approximately 6 months every year. This savings reflects the cost of testing (to demonstrate these furnaces remain in compliance with emission limits) minus the savings realized from operating with the control devices turned off.

We estimate that 57 facilities will be affected and that the cost per facility ranges from negative $36,000 (a cost savings) per year for a facility changing furnace operating modes to $216,500 per year for a facility installing hooding for testing.

The estimated costs are explained further in the document titled *Updated Cost Estimates for the Proposed Rule Changes to Secondary Aluminum NESHAP,* which is available in the docket for this action.

D. What are the economic impacts?

We performed an economic impact analysis for the proposed revisions and amendments in this supplemental proposed rulemaking. This analysis estimates impacts based on using annualized cost-to-sales ratios for affected firms. For the 28 parent firms affected by this proposed rule, the cost-to-sales estimate for each parent firm is less than 0.1 percent. For more information, please refer to the document titled *Economic Impact Analysis for the Secondary Aluminum Supplemental Proposal,* which is available in the docket.

E. What are the benefits?

We do not anticipate any significant reductions in HAP emissions as a result of these proposed amendments. However, we think that the proposed amendments will help to improve the clarity of the rule, which can improve compliance and minimize emissions. Certain provisions also provide operational flexibility with no increase in HAP emissions.

VI. Request for Comments

As discussed in detail above, we solicit comments on the revised risk assessment and proposed changes presented in this supplemental proposal. We are not re-opening comment on any other elements of the 2012 proposal (77 FR 8576, February 14, 2012). Comments previously received on the 2012 proposal, along with comments received on and within the scope of this supplemental proposal, will be addressed in the final rulemaking action.

We are also interested in any additional data that may help to reduce the uncertainties inherent in the risk assessments and other analyses. We are specifically interested in receiving corrections to 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 on the RTR Web page at *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* 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 page, 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, etc.).
4. Send the entire downloaded file with suggested revisions in Microsoft® Access format and all accompanying documentation to Docket ID No. EPA–HQ–OAR–2010–0544 (through one of the methods 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. 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 RTR Web page at *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.*

VIII. Statutory and Executive Order Reviews

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

This action is not a ''significant regulatory action'' under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is, therefore, not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

B. Paperwork Reduction Act

The information collection requirements in this proposed action have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The ICR document prepared by the EPA has been assigned the EPA ICR number 2453.01.

We are proposing changes to the paperwork requirements to the Secondary Aluminum Production source category that were proposed in 2012.

In addition, in the 2012 proposal, we included an estimate of the burden associated with the affirmative defense in the ICR. However, as explained above, we are withdrawing our proposal to include affirmative defense provisions, and the burden estimate has been revised accordingly.

We estimate 161 regulated entities are currently subject to subpart RRR. The annual monitoring, reporting and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the standards) for these amendments to subpart RRR is estimated to be $2,990,000 per year. This includes 1,694 labor hours per year at a total labor cost of $162,000 per year, and total non-labor capital and operation and maintenance (O&M) costs of $2,828,000 per year. The total burden for the federal government (averaged over the first 3 years after the effective date of the standard) is estimated to be 271 labor hours per year at an annual cost of $12,231. Burden is defined at 5 CFR 1320.3(b).

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.

To comment on the agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden, the EPA has established a public docket for this rule, which includes this ICR, under Docket ID No. EPA–HQ–OAR–2010–0544. Submit any comments related to the ICR to the EPA and OMB. See the **ADDRESSES** section at the beginning of this document for where to submit comments to the EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW., Washington, DC 20503, Attention: Desk Office for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after December 8, 2014, a comment to OMB is best assured of having its full effect if OMB receives it by January 7, 2015. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act, or any other statute, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impacts of this action on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field. For this source category, which has the NAICS code 331314 (*i.e.,* Secondary Smelting and Alloying of Aluminum), the SBA small business size standard is 750 employees according to the SBA small business standards definitions.

After considering the economic impacts of these proposed changes on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. We determined in the economic and small business analysis that, using the results from the cost memorandum, 28 entities will incur costs associated with the proposed rule. Of these 28 entities, nine of them are small. Of these nine, all of them are estimated to experience a negative cost (*i.e.,* a cost savings) as a result of the proposed action according to our analysis. For more information, please refer to the *Economic Impact Analysis for the Secondary Aluminum Supplemental Proposal,* which is available in the docket.

D. Unfunded Mandates Reform Act

This action does not contain a Federal mandate that may result in expenditures of $100 million or more for state, local and tribal governments, in the aggregate, or the private sector in any one year. Thus, this action is not subject to the requirements of section 202 or 205 of the Unfunded Mandates Reform Act (UMRA).

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments as it contains no requirements that apply to such governments nor does it impose obligations upon them.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. None of the facilities subject to this proposed action are owned or operated by state governments. Thus, Executive Order 13132 does not apply to this proposed action.

In the spirit of Executive Order 13132, and consistent with the EPA policy to promote communications between the EPA and State and local governments, the EPA specifically solicits comment on this proposed rule from state and local officials.

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

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). There are no secondary aluminum production facilities that are owned or operated by tribal governments. Thus, Executive Order 13175 does not apply to this action. The EPA specifically solicits additional comments on this proposed action from tribal officials.

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

This action is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it is not economically significant as defined in Executive Order 12866 and because the agency does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in sections III and IV of this document. The public is invited to submit comments or identify peer-reviewed studies and data that assess effects of early life exposures to the pollutants emitted by this source category.

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

This action is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113 (15 U.S.C. 272 note), directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (*e.g.,* materials specifications, test methods, sampling procedures and business practices) that are developed or adopted by VCS bodies. NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable VCS.

This proposed action involves technical standards. Therefore, the agency conducted a search to identify potentially applicable VCS. The VCS ASTM D7520–09, ''Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere'' was identified as an acceptable alternative to EPA Method 9. The standard was developed and is published by the American Society for Testing and Materials (ASTM). The standard can be obtained by contacting ASTM at 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428–2959 or at their Web site, *http://www.astm.org.*

In addition, as a result of comments received on the 2012 proposal, EPA Method 26 was identified as a reasonable alternative to EPA Method 26A and EPA Method 204 was identified as a reasonable alternative method for EPA Methods 1 and 2. The EPA agrees that EPA Methods 26 and 204 are acceptable alternatives for use in this rule. Therefore, the EPA has proposed adding ASTM D7520–09, ''Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere,'' as an alternative method for the currently required EPA Method 9; EPA Method 26 as an alternative for the currently required EPA Method 26A; and EPA Method 204 as an alternative to the currently required EPA Methods 1 and 2.

The EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially-applicable VCS and to explain why such standards should be used in this regulation.

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

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations in the United States.

The EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This proposed rule will not relax the emission limits on regulated sources and will not result in emissions increases.

Because our residual risk assessment determined that there was minimal residual risk associated with the emissions from facilities in this source category, a demographic risk analysis was not necessary for this category. However, the EPA did conduct a proximity analysis for both area and major sources. The results of these analyses are summarized in section IV.A.6 of this notice and in more detail in the *EJ Screening Report for Area Sources* and the *EJ Screening Report for Major Sources,* which are available in the docket for this rulemaking.

List of Subjects in 40 CFR Part 63

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

Dated: November 13, 2014.

Gina McCarthy,

Administrator.

For the reasons stated in the preamble, part 63 of title 40, chapter I, of the Code of Federal Regulations is proposed to be amended as follows:

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCES CATEGORIES

■ 1. The authority citation for part 63 continues to read as follows:

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

Subpart RRR—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SECONDARY ALUMINUM PRODUCTION

■ 2. Section 63.1501 is amended by adding paragraphs (d), (e), and (f) to read as follows:

§ 63.1501 Dates.

* * * * *

(d) The owner or operator of an existing affected source must comply with the following requirements of this subpart by [DATE 180 DAYS FROM PUBLICATION OF THE FINAL RULE IN THE **Federal Register**]: § 63.1505 (k) introductory text, (k)(1) through (k)(5), other than the emission standards for HF in (k)(2); § 63.1506 (a)(1), (c)(1), (g)(5), (k)(3), (m)(4), (n)(1); § 63.1510, (b)(5), (b)(9), (d)(2), (d)(3), (f)(1)(ii), (i)(4), (j)(4), (n)(1), (o)(1), (o)(1)(ii), (s)(2)(iv), (t) introductory text, (t)(2)(i), (t)(2)(ii), (t)(4), (t)(5); § 63.1511(a) introductory text, (b) introductory text, (b)(1), (b)(6), (c)(9), (f)(6), (g)(5); § 63.1512(e)(1), (e)(2), (e)(3), (h)(2), (j), (j)(1)(i), (j)(2)(i), (o)(1), (p)(2); § 63.1513(b) introductory text, (b)(1), (e)(1), (e)(2), (e)(3), (f); § 63.1516 (b) introductory text, (b)(2)(iii), (b)(3), (d); § 63.1517(b)(16)(i), (b)(18), (b)(19), (c).

(e) The owner or operator of an existing affected source must comply with the following requirements of this subpart by [DATE 2 YEARS FROM PUBLICATION OF THE FINAL RULE IN THE **Federal Register**]: § 63.1505(i)(4) and (k)(2) emission standards for HF; § 63.1512(e)(4) through (7) requirements for testing existing uncontrolled group 1 furnaces; and § 63.1514 requirements for change of furnace classification.

(f) The owner or operator of a new affected source that commences construction or reconstruction after February 14, 2012 must comply with all of the requirements listed in paragraphs (d) and (e) of this section by [DATE OF PUBLICATION OF THE FINAL RULE IN THE **Federal Register**] or upon startup, whichever is later.

■ 3. Section 63.1503 is amended by adding in alphabetical order definitions for ''round top furnace,'' ''shutdown,'' and ''startup'' to read as follows:

§ 63.1503 Definitions.

* * * * *

Round top furnace means a cylindrically-shaped reverberatory furnace that has a top that is removed for charging and other furnace operations.

* * * * *

Shutdown means the period of operation for thermal chip dryers, scrap dryers/delacquering kilns, decoating kilns, dross-only furnaces, group 1 furnaces, in-line fluxers, sweat furnaces and group 2 furnaces that begins when the introduction of feed/charge is halted and all product has been removed from the emission unit (*e.g.,* by tapping a furnace).

* * * * *

Startup means the period of operation for thermal chip dryers, scrap dryers/delacquering kilns, decoating kilns, dross-only furnaces, group 1 furnaces, in-line fluxers, sweat furnaces and group 2 furnaces that begins with equipment warming from a cold start or a complete shutdown. Startup ends at the point that feed/charge is introduced.

* * * * *

■ 4. Section 63.1506 is amended by adding paragraph (c)(4) to read as follows:

§ 63.1506 Operating requirements.

* * * * *

(c) * * *

(4) In lieu of paragraph (c)(1) of this section, the owner or operator of a sweat furnace may design, install and operate each sweat furnace in accordance with paragraphs (c)(4)(i) through (iii) of this section.

(i) As demonstrated by an annual negative air flow test conducted in accordance with § 63.1510(d)(3), air flow must be into the sweat furnace or towards the plane of the sweat furnace opening.

(ii) The owner or operator must maintain and operate the sweat furnace in a manner consistent with the good practices requirements for minimizing emissions, including fugitive emissions, in paragraph (a)(5) of this section. Procedures that will minimize fugitive emissions may include, but are not limited to the following:

(A) Increasing the exhaust rate from the furnace with draft fans, so as to capture emissions that might otherwise escape from the sweat furnace opening;

(B) Minimizing the time the sweat furnace doors are open;

(C) Keeping building doors and other openings closed to the greatest extent possible to minimize drafts that would divert emissions from being drawn into the sweat furnace;

(D) Maintaining burners on low-fire or pilot operation while the doors are open;

(E) Conducting periodic inspections and maintenance of sweat furnace components to ensure their proper operation and performance including but not limited to, door assemblies, seals, combustion chamber refractory material, afterburner and stack refractory, blowers, fans, dampers, burner tubes, door raise cables, pilot light assemblies, baffles, sweat furnace and afterburner shells and other internal structures.

(iii) The owner or operator must document in their OM&M plan the procedures to be used to minimize emissions, including fugitive emissions, in addition to the procedures to ensure the proper operation and maintenance of the sweat furnace.

* * * * *

■ 5. Section 63.1510 is amended by revising paragraph (d)(2) and adding paragraph (d)(3) to read as follows:

§ 63.1510 Monitoring requirements.

* * * * *

(d) * * *

(2) Inspect each capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating requirements in § 63.1506(c) and record the results of each inspection. This inspection shall include a volumetric flow rate measurement taken at a location in the ductwork downstream of the hoods that is representative of the actual volumetric flow rate without interference due to leaks, ambient air added for cooling or ducts from other hoods. The flow rate measurement must be performed in accordance with paragraphs (d)(2)(i), (ii), or (iii) of this section. As an alternative to the flow rate measurement specified in this paragraph, the inspection may satisfy the requirements of this paragraph, including the operating requirements in § 63.1506(c), by including permanent total enclosure verification in accordance with (d)(2)(i) or (iv) of this section.

(i) Conduct annual flow rate measurements using EPA Methods 1 and 2 in Appendix A to 40 CFR part 60, or conduct annual verification of a permanent total enclosure using EPA Method 204; or

(ii) As an alternative to annual flow rate measurements using EPA Methods 1 and 2, measurement with EPA Methods 1 and 2 can be performed once every 5 years, provided that:

(A) A flow rate indicator consisting of a pitot tube and differential pressure gauge (Magnehelic®, manometer or other differential pressure gauge) is installed with the pitot tube tip located at a representative point of the duct proximate to the location of the Methods 1 and 2 measurement site; and

(B) The flow rate indicator is installed and operated in accordance with the manufacturer's specifications; and

(C) The differential pressure is recorded during the Method 2 performance test series; and

(D) Differential pressure readings are recorded daily, and maintained at or above 90 percent of the pressure differential indicated by the flow rate indicator during the most recent Method 2 performance test series; and

(E) An inspection of the pitot tube and associated lines for damage, plugging, leakage and operational integrity is conducted at least once per year; or

(iii) As an alternative to annual flow rate measurements using EPA Methods 1 and 2, measurement with EPA Methods 1 and 2 can be performed once every 5 years, provided that:

(A) Daily measurements of the capture and collection system's fan revolutions per minute (RPM) are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and

(B) Readings are recorded daily and maintained at or above 90 percent of the RPM measured during the most recent Method 2 performance test series.

(iv) As an alternative to the annual verification of a permanent total enclosure using EPA Method 204, verification can be performed once every 5 years, provided that:

(A) Negative pressure in the enclosure is directly monitored by a pressure indicator installed at a representative location;

(B) Pressure readings are recorded daily or the system is interlocked to halt material feed should the system not operate under negative pressure;

(C) When there are readings outside the range specified in the OM&M plan, the facility investigates and takes steps to restore normal operation, which may include initial inspection and evaluation, recording that operations returned to normal without operator action or other applicable actions; and

(D) An inspection of the pressure indicator for damage and operational integrity is conducted at least once per calendar year.

(3) In lieu of paragraph (d)(2) of this section, the owner or operator of a sweat furnace may inspect each sweat furnace at least once each calendar year to ensure that they are being operated in accordance with the negative air flow requirements in § 63.1506(c)(4). The owner or operator of a sweat furnace must demonstrate negative air flow into the sweat furnace in accordance with paragraphs (d)(3)(i) through (iii) of this section.

(i) Perform an annual visual smoke test to demonstrate airflow into the sweat furnace or towards the plane of the sweat furnace opening;

(ii) Perform the smoke test using a smoke source, such as a smoke tube, smoke stick, smoke cartridge, smoke candle or other smoke source that produces a persistent and neutral buoyancy aerosol; and

(iii) Perform the visual smoke test at a safe distance from and near the center of the sweat furnace opening.

* * * * *

■ 6. Section 63.1511 is amended by revising paragraph (b)(1) to read as follows:

§ 63.1511 Performance test/compliance demonstration general requirements.

* * * * *

(b) * * *

(1) The performance tests must be conducted under representative (normal) conditions expected to produce the highest level of HAP emissions expressed in the units of the emission standards for the HAP (considering the extent of scrap contamination, reactive flux addition rate and feed/charge rate). If a single test condition is not expected to produce the highest level of emissions for all HAP, testing under two or more sets of conditions (for example high contamination at low feed/charge rate, and low contamination at high feed/charge rate) may be required. Any subsequent performance tests for the purposes of establishing new or revised parametric limits shall be allowed upon pre-approval from the permitting authority for major sources, or the Administrator for area sources. These new parametric settings shall be used to demonstrate compliance for the period being tested.

* * * * *

■ 7. Section 63.1512 is amended by adding paragraphs (e)(4) through (7) to read as follows:

§ 63.1512 Performance test/compliance demonstration requirements and procedures.

* * * * *

(e) * * *

(4) When testing an existing uncontrolled furnace, the owner or operator must comply with the requirements of either paragraphs (e)(4)(i) or (ii) of this section at the next required performance test.

(i) Install hooding that meets ACGIH Guidelines, or

(ii) Assume a 67-percent capture efficiency for the furnace exhaust (*i.e.,* multiply emissions measured at the furnace exhaust outlet by 1.5). If the source fails to demonstrate compliance using the 67-percent capture efficiency assumption, the owner or operator must re-test with a hood that meets the ACGIH Guidelines within 180 days, or petition the permitting authority for major sources, or the Administrator for area sources, within 180 days that such hoods are impractical under the provisions of paragraph (e)(6) of this section and propose testing procedures that will minimize fugitive emissions during the performance test according to paragraph (e)(7) of this section.

(iii) Existing round top furnaces are exempt from the requirements of paragraphs (e)(4)(i) and (ii) of this section. Round top furnaces must be operated to minimize fugitive emissions according to paragraph (e)(7) of this section.

(5) When testing a new uncontrolled furnace the owner or operator must:

(i) Install hooding that meets ACGIH Guidelines or petition the permitting authority for major sources, or the Administrator for area sources, that such hoods are impracticable under the provisions of paragraph (e)(6) of this section and propose testing procedures that will minimize fugitive emissions during the performance test according to the provisions of paragraph (e)(7); and

(ii) Subsequent testing must be conducted in accordance with paragraphs (e)(4)(i) and (ii) of this section.

(6) The installation of hooding that meets ACGIH Guidelines is considered impractical if any of the following conditions exist:

(i) Building or equipment obstructions (for example, wall, ceiling, roof, structural beams, utilities, overhead crane or other obstructions) are present such that the temporary hood cannot be located consistent with acceptable hood design and installation practices;

(ii) Space limitations or work area constraints exist such that the temporary hood cannot be supported or located to prevent interference with normal furnace operations or avoid unsafe working conditions for the furnace operator; or

(iii) Other obstructions and limitations subject to agreement of the permitting authority for major sources, or the Administrator for area sources.

(7) Testing procedures that will minimize fugitive emissions may include, but are not limited to the following:

(i) Installing a hood that does not entirely meet ACGIH guidelines;

(ii) Using the building as an enclosure, and measuring emissions exhausted from the building if there are no other furnaces or other significant sources in the building of the pollutants to be measured;

(iii) Installing temporary baffles on those sides or top of furnace opening if it is practical to do so where they will not interfere with material handling or with the furnace door opening and closing;

(iv) Increasing the exhaust rate from the furnace with draft fans, so as to capture emissions that might otherwise escape into the building if it can be done without increasing furnace emissions in a way that make the test non-representative;

(v) Minimizing the time the furnace doors are open or the top is off;

(vi) Delaying gaseous reactive fluxing until charging doors are closed and, for round top furnaces, until the top is on;

(vii) Agitating or stirring molten metal as soon as practicable after salt flux addition and closing doors as soon as possible after solid fluxing operations, including mixing and dross removal;

(viii) Keeping building doors and other openings closed to the greatest extent possible to minimize drafts that would divert emissions from being drawn into the furnace; or

(ix) Maintaining burners on low-fire or pilot operation while the doors are open or the top is off.

* * * * *

■ 8. Section 63.1513 is amended by adding paragraph (f) to read as follows:

§ 63.1513 Equations for determining compliance.

* * * * *

(f) *Periods of startup and shutdown.* For a new or existing affected source, or a new or existing emission unit subject to an emissions limit in paragraphs § 63.1505(b) through (j) expressed in units of pounds per ton of feed/charge, or µg TEQ or ng TEQ per Mg of feed/charge, demonstrate compliance during periods of startup and shutdown in accordance with paragraph (f)(1) of this section or determine your emissions per unit of feed/charge during periods of startup and shutdown in accordance with paragraph (f)(2) of this section. Startup and shutdown emissions for group 1 furnaces and in-line fluxers must be calculated individually, and not on the basis of a SAPU. Periods of startup and shutdown are excluded from the calculation of SAPU emission limits in § 63.1505(k), the SAPU monitoring requirements in § 63.1510(t) and the SAPU emissions calculations in § 63.1513(e).

(1) For periods of startup and shutdown, records establishing a feed/charge rate of zero, a flux rate of zero, and that the affected source or emission unit was either heated with electricity, propane or natural gas as the sole sources of heat or was not heated, may be used to demonstrate compliance with the emission limit, or

(2) For periods of startup and shutdown, divide your measured emissions in lb/hr or µg/hr or ng/hr by the feed/charge rate in tons/hr or Mg/hr from your most recent performance test associated with a production rate greater than zero, or the rated capacity of the affected source if no prior performance test data is available.

■ 9. Amend section 63.1514, as proposed to be added at 77 FR 8576 (February 14, 2012), by revising paragraph (e) to read as follows:

§ 63.1514 Change of furnace classification.

* * * * *

(e) *Limit on Frequency of changing furnace operating mode.*

(1) Changing furnace operating mode including reversion to the previous mode, as provided in paragraphs (a) through (d) of this section, may not be done more frequently than 4 times in any 6-month period.

(2) If additional changes are needed, the owner or operator must apply in advance to the permitting authority, for major sources, or the Administrator, for area sources, for approval.

■ 10. Section 63.1517 is amended by adding paragraphs (b)(18) and (19) to read as follows:

§ 63.1517 Records.

* * * * *

(b) * * *

(18) For each period of startup or shutdown for which the owner or operator chooses to demonstrate compliance for an affected source based on a feed/charge rate of zero, a flux rate of zero and the use of electricity, propane or natural gas as the sole sources of heating or the lack of heating, the owner or operator must maintain the following records:

(i) The date and time of each startup and shutdown,

(ii) The quantities of feed/charge and flux introduced during each startup and shutdown, and

(iii) The types of fuel used to heat the unit, or that no fuel was used, during startup and shutdown.

(19) For owners or operators that choose to change furnace operating modes, the following records must be maintained:

(i) The date and time of each change in furnace operating mode, and

(ii) The nature of the change in operating mode (for example, group 1 controlled furnace processing other than clean charge to group 2).

■ 11. Table 2 to subpart RRR of part 63 is amended by revising the entry for ''All affected sources and emission units with an add-on air pollution control device'' to read as follows:

TABLE 2 TO SUBPART RRR OF PART 63—SUMMARY OF OPERATING REQUIREMENTS FOR NEW AND EXISTING AFFECTED SOURCES AND EMISSION UNITS

Affected source/emission unit	Monitor type/operation/process	Operating requirements
All affected sources and emission units with an add-on air pollution control device.	Emission capture and collection system	Design and install in accordance with ACGIH Guidelines; operate in accordance with OM&M plan (sweat furnaces may be operated according to 63.1506(c)(4)).[b]
* * *	* *	* *

* * * * *

[b] OM&M plan—Operation, maintenance, and monitoring plan.

* * * * *

■ 12. Table 3 to subpart RRR of part 63 is amended by revising the entry for ''All affected sources and emission units with an add-on air pollution control device'' and revising footnote d to Table 3 to read as follows:

TABLE 3 TO SUBPART RRR OF PART 63—SUMMARY OF MONITORING REQUIREMENTS FOR NEW AND EXISTING AFFECTED SOURCES AND EMISSION UNITS

Affected source/emission unit	Monitor type/operation/process	Monitoring requirements
All affected sources and emission units with an add-on air pollution control device.	Emission capture and collection system	Annual inspection of all emission capture, collection, and transport systems to ensure that systems continue to operate in accordance with ACGIH Guidelines. Inspection includes volumetric flow rate measurements or verification of a permanent total enclosure using EPA Method 204.[d]
* * *	* *	* *

[d] The frequency of volumetric flow rate measurements may be decreased to once every 5 years if daily differential pressure measures or daily fan RPM measurements are made in accordance with § 63.1510(d)(ii) and (iii). The frequency of annual verification of a permanent total enclosure may be decreased to once every 5 years if negative pressure measurements in the enclosure are made daily in accordance with § 63.1510(d)(iv). In lieu of volumetric flow rate measurements or verification of permanent total enclosure, sweat furnaces may demonstrate annually negative air flow into the sweat furnace opening in accordance with § 63.1510(d)(3).

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