ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2010–0895; FRL–9491–8]

RIN 2060–AQ–11

National Emissions Standards for Hazardous Air Pollutants: Ferroalloys Production

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The EPA is proposing amendments to the national emissions standards for hazardous air pollutants for Ferroalloys Production to address the results of the residual risk and technology review that the EPA is required to conduct under the Clean Air Act. These proposed amendments include revisions to particulate matter standards for electric arc furnaces, metal oxygen refining processes, and crushing and screening operations. The amendments also add emission limits for hydrochloric acid, mercury, polycyclic aromatic hydrocarbons, and formaldehyde from electric arc furnaces. Furthermore, the amendments expand and revise the requirements to control fugitive emissions from furnace operations and casting. Other proposed requirements related to testing, monitoring, notification, recordkeeping, and reporting are included. We are also proposing to revise provisions addressing periods of startup, shutdown, and malfunction to ensure that the rules are consistent with a recent court decision.

DATES: Comments must be received on or before January 9, 2012. Under the Paperwork Reduction Act, comments on the information collection provisions are best assured of having full effect if the Office of Management and Budget (OMB) receives a copy of your comments on or before December 23, 2011.

Public Hearing. If anyone contacts the EPA requesting to speak at a public hearing by December 5, 2011, a public hearing will be held on December 8, 2011.

ADDRESSES: Submit your comments, identified by Docket ID Number EPA–HQ–OAR–2010–0895, by one of the following methods:

- *http://www.regulations.gov:* Follow the on-line instructions for submitting comments.
- *Email: a-and-r-docket@epa.gov,* Attention Docket ID Number EPA–HQ–OAR–2010–0895.
- *Fax:* (202) 566–9744, Attention Docket ID Number EPA–HQ–OAR–2010–0895.
- *Mail:* U.S. Postal Service, send comments to: EPA Docket Center, EPA West (Air Docket), Attention Docket ID Number EPA–HQ–OAR–2010–0895, U.S. Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave. NW., Washington, DC 20460. Please include a total of two copies. In addition, 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 Delivery:* U.S. Environmental Protection Agency, EPA West (Air Docket), Room 3334, 1301 Constitution Ave. NW., Washington, DC 20004, Attention Docket ID Number EPA–HQ–OAR–2010–0895. 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 Number EPA–HQ–OAR–2010–0895. The EPA's policy is that all comments received will be included in the public docket without change and may be made available on-line 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 avoid the use of special characters, 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 *epa.gov/epahome/dockets.htm.*

Docket. The EPA has established a docket for this rulemaking under Docket ID Number EPA–HQ–OAR–2010–0895. All documents in the docket are listed in the 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 regulations.gov or in hard copy at the EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave. 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 a public hearing is held, it will begin at 10 a.m. on December 8, 2011 and will be held at the EPA's campus in Research Triangle Park, North Carolina, or at an alternate facility nearby. Persons interested in presenting oral testimony or inquiring as to whether a public hearing is to be held should contact Ms. Virginia Hunt, Office of Air Quality Planning and Standards (OAQPS), Sector Policies and Programs Division, (D243–02), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; *telephone number:* (919) 541–0832.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Mr. Conrad Chin, 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) 541–1512; *fax number:* (919) 541–3207; and *email address: chin.conrad@epa.gov.* For specific information regarding the risk modeling methodology, contact Ms. Darcie Smith, Health and Environmental Impacts Division (C539–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; *telephone number:* (919) 541–2076; *fax number:* (919) 541–0840; and *email address: smith.darcie@epa.gov.* For information about the applicability of the National Emissions Standards for

Hazardous Air Pollutants (NESHAP) to a particular entity, contact the appropriate person listed in Table 1 of this preamble.

TABLE 1—LIST OF EPA CONTACTS FOR THE NESHAP ADDRESSED IN THIS PROPOSED ACTION

NESHAP for:	OECA contact [1]	OAQPS contact [2]
Ferroalloys Production	Cary Secrest, (202) 564–8661 *secrest.cary@epa.gov* ...	Conrad Chin, (919) 541–1512, *chin.conrad@epa.gov.*

[1] EPA Office of Enforcement and Compliance Assurance.
[2] EPA Office of Air Quality Planning and Standards.

SUPPLEMENTARY INFORMATION:

Preamble Acronyms and Abbreviations

Several acronyms and terms used to describe industrial processes, data inventories, and risk modeling are included in this preamble. While this may not be an exhaustive list, to ease the reading of this preamble and for reference purposes, the following terms and acronyms are defined here:

ACI	Activated Carbon Injection
ADAF	age-dependent adjustment factors
AEGL	acute exposure guideline levels
AERMOD	air dispersion model used by the HEM–3 model
ATSDR	Agency for Toxic Substances and Disease Registry
BLDS	bag leak detection system
BPT	benefit-per-ton
CAA	Clean Air Act
CalEPA	California EPA
CBI	Confidential Business Information
CFR	Code of Federal Regulations
CIIT	Chemical Industry Institute of Toxicology
CO_2	carbon dioxide
EJ	environmental justice
EPA	Environmental Protection Agency
ERPG	Emergency Response Planning Guidelines
ERT	Electronic Reporting Tool
FR	**Federal Register**
gr/dscf	grains per dry standard cubic foot
HAP	hazardous air pollutants
HCl	hydrochloric acid
HEM–3	Human Exposure Model, Version 1.1.0
HI	Hazard Index
HON	hazardous organic national emissions standards for hazardous air pollutants
HQ	Hazard Quotient
ICR	information collection request
IRIS	Integrated Risk Information System
kg/hr	kilograms per hour
kg/hr/MW	kilograms per hour per megawatt
km	kilometer
lb/hr	pounds per hour
lb/hr/MW	pounds per hour per megawatt
lb/yr	pounds per year
LML	lowest measured level
MACT	maximum achievable control technology
MACT Code	Code within the National Emissions Inventory used to identify processes included in a source category
MDL	method detection limit
mg/dscm	milligrams per dry standard cubic meter
MIR	maximum individual risk
MM	millions
MW	megawatt
NAC/AEGL Committee	National Advisory Committee for Acute Exposure Guideline Levels for Hazardous Substances
NAICS	North American Industry Classification System
NAS	National Academy of Sciences
NATA	National Air Toxics Assessment
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NRC	National Research Council
NTTAA	National Technology Transfer and Advancement Act
OAQPS	Office of Air Quality Planning and Standards
OECA	Office of Enforcement and Compliance Assurance
OMB	Office of Management and Budget
PAH	polycyclic aromatic hydrocarbons
PB–HAP	hazardous air pollutants known to be persistent and bio-accumulative in the environment
PM	particulate matter
POM	polycyclic organic matter
QA	quality assurance
RCRA	Resource Conservation and Recovery Act
RDL	representative detection level
REL	reference exposure level
RFA	Regulatory Flexibility Act
RfC	reference concentration
RfD	reference dose
RIA	Regulatory Impact Analysis
RTR	residual risk and technology review
SAB	Science Advisory Board
SBA	Small Business Administration
SOP	standard operating procedures
SSM	startup, shutdown, and malfunction
TOSHI	target organ-specific hazard index
TPY	tons per year
TRIM.FaTE	Total Risk Integrated Methodology.Fate, Transport, and Ecological Exposure model
TTN	Technology Transfer Network
UF	uncertainty factor
$\mu g/m^3$	microgram per cubic meter
UMRA	Unfunded Mandates Reform Act
UPL	upper predictive limit
URE	unit risk estimate
VCS	voluntary consensus standards
WWW	world wide web

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I. General Information

A. Summary of Costs and Benefits

Consistent with the recently issued Executive Order 13563, ''Improving Regulation and Regulatory Review,'' we have estimated the costs and benefits of the proposed rule. The estimated net benefits of the proposed rule at a 3 percent discount rate are $67 to $170 million or $59 to $150 million at a 7 percent discount rate. The monetized benefits in this analysis are due to $PM_{2.5}$ co-benefits, as HAP benefits are not monetized. Table 2 presents a summary of the results of the analysis.

TABLE 2—SUMMARY OF THE ESTIMATED ANNUAL MONETIZED BENEFITS, SOCIAL COSTS, AND NET BENEFITS FOR THE PROPOSED RULE IN 2015

[Millions of 2010$] [a]

	3% Discount rate	7% Discount rate
Total Monetized Benefits [b]	$71 to $170	$63 to $160.
Total Social Costs [c]	$4.0	$4.0.
Net Benefits	$67 to $170	$59 to $150.
Non-monetized Benefits	Reduced exposure to Hazardous Air Pollutants (HAP), including Manganese, polycyclic aromatic hydrocarbons (PAH), Chromium, Arsenic, Nickel, and Mercury.	

[a] All estimates are for implementation year 2015 (the benefit estimates use 2016 values as an approximation); and are rounded to two significant figures so numbers may not sum across columns. All fine particles are assumed to have equivalent health effects, but the benefit-per-ton (BPT) estimates vary because each ton of precursor reduced has a different propensity to become particulate matter $(PM)_{2.5}$. These benefits incorporate the conversion from precursor emissions to ambient fine particles. The BPT estimates are based on recent air quality modeling specific to the ferroalloys sector.

[b] All estimates are for 2016, which we use as an approximation for impacts in 2015.

[c] The compliance costs of the proposal serve as a proxy for the social costs. The compliance costs are estimated using a 7% interest rate.

Under the proposed amendments, ferroalloys production facilities are expected to incur $11.4 million in capital costs to install new air pollution controls and new or improved monitoring systems. We have estimated the annualized costs to be $4.0 million, which includes estimated monitoring and testing costs. Section V.C of this preamble contains more detail on these estimated cost impacts.

B. What are NESHAP?

1. 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 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) calls for us to promulgate national technology-based emission standards for hazardous air pollutants (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, these technology-based standards must reflect the maximum degree of emissions reductions of HAP achievable (after considering cost, energy requirements, and nonair quality health and environmental impacts) and are commonly referred to as maximum achievable control technology (MACT) standards.

MACT standards must require the maximum degree of emissions 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)–(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 pollutants, 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 sections 112(h)(1)–(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 floors for existing sources can be less stringent than floors for new sources, but they cannot be 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, we 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 emissions 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 8 years, under CAA section 112(d)(6). In conducting this review, the EPA is not obliged to completely recalculate the prior MACT determination. *NRDC* v. *EPA,* 529 F.3d 1077, 1084 (DC Cir., 2008).

The second stage in standard-setting focuses on reducing any remaining (*i.e.,* ''residual'') risk according to CAA section 112(f). This provision requires, first, 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 this report (*Residual Risk Report to Congress,* EPA–453/R–99–001) in March 1999. Congress did not act in response to the report, thereby triggering the EPA's obligation under CAA section 112(f)(2) to analyze and address residual risk.

CAA section 112(f)(2) requires us to determine for source categories subject to certain MACT standards, whether those emissions standards provide an ample margin of safety to protect public health. 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 are sufficiently protective. *NRDC* v. *EPA,* 529 F.3d 1077, 1083 (DC 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.

Section 112(f)(2) of the CAA expressly preserves our use of the two-step process for developing standards to address any residual risk and our 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 **Federal Register** (FR) 38044, September 14, 1989). The first step in this process is the determination of acceptable risk. The second step provides for an ample margin of safety to protect public health, which is the level at which the standards are to 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).

The terms ''individual most exposed,'' ''acceptable level'' and ''ample margin of safety'' are not specifically defined in the CAA. However, CAA section 112(f)(2)(B) preserves the EPA's interpretation set out in the Benzene NESHAP, and the United States Court of Appeals for the District of Columbia Circuit in *NRDC* v. *EPA,* 529 F.3d 1077, concluded that the EPA's interpretation of subsection 112(f)(2) is a reasonable one. See *NRDC* v. *EPA,* 529 F.3d at 1083 (DC Cir. 2008), which says ''[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,* volume 1, p. 877 (Senate debate on Conference Report). We also notified Congress in the *Residual Risk Report to Congress* that we intended to use the Benzene NESHAP approach in making CAA section 112(f) residual risk determinations (EPA–453/R–99–001, p. ES–11).

In the Benzene NESHAP, we stated as an overall objective:

> * * * in protecting public health with an ample margin of safety, we strive 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 facility would have if he or she were exposed to the maximum pollutant concentrations for 70 years.

The Agency also stated that, ''The 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.'' The Agency went on to conclude that ''estimated incidence would be weighed along with other health risk information in judging acceptability.'' As explained more fully in our *Residual Risk Report to Congress,* the EPA does not define ''rigid line[s] of acceptability,'' but rather considers broad objectives to be weighed with a series of other health measures and factors (EPA–453/R–99–001, p. ES–11). 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'' (*Residual Risk Report to Congress,* p. 178, quoting the Vinyl Chloride decision at 824 F.2d 1165) 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 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 acknowledge 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 maximum individual lifetime cancer risk as a metric for determining acceptability, we acknowledged in the 1989 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 one million (one 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, ''Particular 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,

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[1] ''Adverse environmental effect'' is defined in CAA section 112(a)(7) 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.

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 1989 Benzene NESHAP the following: ''In 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-kilometer (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-emissions of pollutants.'' *Id.*

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 explained in the Benzene NESHAP, ''[e]ven though the risks judged 'acceptable' by EPA in the first step of the Vinyl Chloride inquiry are already low, 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.''

In *NRDC* v. *EPA,* 529 F.3d 1077, 1082 (DC Cir. 2008), the Court of Appeals held that section 112(f)(2) ''incorporates EPA's 'interpretation' of the Clean Air Act from the Benzene Standard, and the text of this provision draws no distinction between carcinogens and non-carcinogens.'' Additionally, the Court held there is nothing on the face of the statute that limits the Agency's section 112(f) assessment of risk to carcinogens. *Id.* at 1081–82. In the *NRDC* case, the petitioners argued, among other things, that section 112(f)(2)(B) applied only to non-carcinogens. The DC Circuit rejected this position, holding that the text of that provision ''draws no distinction between carcinogens and non-carcinogens,'' *id.,* and that Congress' incorporation of the Benzene standard applies equally to carcinogens and non-carcinogens.

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. 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 CAA section 112(f). 54 FR 38046.

2. How do we consider the risk results in making decisions?

As discussed in the previous section of this preamble, we apply a two-step process for developing standards to address residual risk. In the first step, the EPA determines if risks are acceptable. This determination ''considers all health information, including risk estimation uncertainty, and includes a presumptive limit on maximum individual lifetime [cancer] risk (MIR)[2] of approximately one in 10 thousand [*i.e.,* 100 in one million].'' 54 FR 38045. In the second step of the process, the EPA sets the standard at a level that provides an ample margin of safety ''in consideration of all health information, including the number of persons at risk levels higher than approximately one in one million, as well as other relevant factors, including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision.'' *Id.*

In past residual risk determinations, the EPA presented a number of human health risk metrics associated with emissions from the category under review, including: The MIR; the numbers of persons in various risk ranges; cancer incidence; the maximum noncancer hazard index (HI); and the maximum acute noncancer hazard. In estimating risks, the EPA considered sources under review that are located near each other and that affect the same population. The EPA developed risk estimates based on the actual emissions from the source category under review as well as based on the maximum emissions allowed pursuant to the source category MACT standard. The EPA also discussed and considered risk estimation uncertainties. The EPA is providing this same type of information in support of these actions.

The Agency acknowledges that the Benzene NESHAP provides flexibility regarding what factors the EPA might consider in making our determinations and how they might be weighed for each source category. In responding to comment on our policy under the Benzene NESHAP, the EPA explained that: ''The policy chosen by the Administrator permits consideration of multiple measures of health risk. Not only can the MIR figure be considered, but also incidence, the presence of noncancer health effects, and the uncertainties of the risk estimates. In this way, the effect on the most exposed individuals can be reviewed as well as the impact on the general public. These factors can then be weighed in each individual case. This approach complies with the Vinyl Chloride mandate that the Administrator ascertain an acceptable level of risk to the public by employing [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.' ''

For example, the level of the MIR is only one factor to be weighed in determining acceptability of risks. The Benzene NESHAP explains ''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.'' Similarly, with regard to the ample margin of safety analysis, the Benzene NESHAP states 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

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

and economic factors (along with the health-related factors) vary from source category to source category.''

C. Does this action apply to me?

The regulated industrial source category that is the subject of this proposal is listed in Table 3. Table 3 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. The proposed standards, once finalized, will be directly applicable to affected sources. Federal, state, local, and tribal government entities are not affected by this proposed action. As defined in the MACT (major source) source category listing report published by the EPA in 1992, the ''Ferroalloys Production'' source category is any facility engaged in producing ferroalloys such as ferrosilicon, ferromanganese, and ferrochrome.[3] Subsequently, the EPA redefined the MACT source category when it promulgated the Ferroalloy MACT standard so that it now includes only major sources that produce products containing manganese. (64 FR 27450, May 20, 1999) The MACT standard applies specifically to two ferroalloy product types: ferromanganese and silicomanganese.

TABLE 3—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS PROPOSED ACTION

Source category	NESHAP	NAICS code [1]	MACT code [2]
Ferroalloys Production	Ferroalloys Production	331112	0304

[1] North American Industry Classification System.
[2] Maximum Achievable Control Technology.

D. 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 proposal will also be available on the World Wide Web (WWW) through the EPA's Technology Transfer Network (TTN). Following signature by the EPA Administrator, a copy of this proposed action will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules at the following address: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* The TTN provides information and technology exchange in various areas of air pollution control. Supporting documents and other relevant information including a version of the regulatory text showing specific proposed changes is located in the docket (EPA–HQ–OAR–2010–0895).

Additional information is available on the residual risk and technology review (RTR) Web page at: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* This information includes source category descriptions and detailed emissions estimates and other data that were used as inputs to the risk assessment.

E. 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, a copy of the comments that does not contain the information claimed as CBI must be submitted 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 Number EPA–HQ–OAR–2010–0895.

II. Background

A. What is this source category and how did the 1999 MACT standards regulate its HAP emissions?

The NESHAP (or MACT rule) for Ferroalloys Production: Ferromanganese and Silicomanganese was promulgated on May 20, 1999 (64 FR 27450) and codified at 40 CFR part 63, subpart XXX.[4] The 1999 NESHAP applies to all new and existing ferroalloys production facilities that manufacture ferromanganese or silicomanganese and are major sources or are co-located at major sources of HAP emissions. The rule's product-specific applicability reflected the fact that there was only one known major source within the Ferroalloys Production source category at the time of promulgation. Since then, one other major source of silicomanganese has started production, but it was permitted as an existing source.

Today, there are two ferroalloys production facilities subject to the MACT rule. No greenfield manganese ferroalloys production facilities have been built in over 20 years, and we anticipate no greenfield manganese ferroalloys production facilities in the foreseeable future, although one facility is currently exploring expanding operations through the addition of a new furnace.

Ferroalloys are alloys of iron in which one or more chemical elements (such as chromium, manganese, and silicon) are added into molten metal. Ferroalloys are consumed primarily in iron and steel making and are used to produce steel and cast iron products with enhanced or special properties.

Ferroalloys within the scope of this source category are produced using submerged electric arc furnaces, which are furnaces in which the electrodes are submerged into the charge. The submerged arc process is a reduction smelting operation. The reactants consist of metallic ores (ferrous oxides, silicon oxides, manganese oxides, etc.) and a carbon-source reducing agent, usually in the form of coke, charcoal, high- and low-volatility coal, or wood chips. Raw materials are crushed and sized, and then conveyed to a mix house for weighing and blending. Conveyors, buckets, skip hoists, or cars transport the processed material to hoppers above the furnace. The mix is gravity-fed

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[3] EPA. Documentation for Developing the Initial Source Category List—Final Report, EPA/OAQPS, EPA–450/3–91–030, July, 1992.

[4] The emission limits were revised on March 22, 2001 (66 FR 16024) in response to a petition for reconsideration submitted to the EPA following promulgation of the final rule, and a petition for review filed in the U.S. Court of Appeals for the District of Columbia Circuit.

through a feed chute either continuously or intermittently, as needed. At high temperatures in the reaction zone, the carbon source reacts with metal oxides to form carbon monoxide and to reduce the ores to base metal.[5] The molten material (product and slag) is tapped from the furnace, sometimes subject to post-furnace refining, and poured into casting beds on the furnace room floor. Once the material hardens, it is transported to product crushing and sizing systems and packaged for transport to the customer.

HAP generating processes include electrometallurgical (furnace) operations (smelting and tapping), other furnace room operations (ladle treatment and casting), building fugitives, raw material handling and product handling. HAP are emitted from ferroalloys production as process emissions, process fugitive emissions, and outdoor fugitive dust emissions.

Process emissions are the exhaust gases from the control devices, primarily the furnace control device, metal oxygen refining control device and crushing operations control device. The HAP in process emissions are primarily composed of metals (mostly manganese, arsenic, nickel, lead, mercury and chromium) and also may include organic compounds that result from incomplete combustion of coal, coke or other fuel that is charged to the furnaces as a reducing agent. There are also process metal HAP emissions from the product crushing control devices. Process fugitive emissions occur at various points during the smelting process (such as during charging and tapping of furnaces and casting) and are assumed to be similar in composition to the process emissions. Outdoor fugitive dust emissions result from the entrainment of HAP in ambient air due to material handling, vehicle traffic, wind erosion from storage piles, and other various activities. Outdoor fugitive dust emissions are composed of particulate metal HAP only.

The MACT rule applies to process emissions from the submerged arc furnaces, the metal oxygen refining process, and the product crushing equipment, process fugitive emissions from the furnace and outdoor fugitive dust emissions sources such as roadways, yard areas, and outdoor material storage and transfer operations. For process sources, the NESHAP specifies numerical emissions limits for particulate matter (as a surrogate for non-mercury (or particulate) metal HAP) from the electric (submerged) arc furnaces (including smelting and tapping emissions), with the specific limits depending on furnace type, size, and product being made. Particulate matter emission limits (again as a surrogate for particulate metal HAP) are also in place for process emissions from the metal oxygen refining process and product crushing and screening equipment. Table 4 is a summary of the applicable limits.

TABLE 4—EMISSION LIMITS IN SUBPART XXX

New or reconstructed or existing source	Affected source	Applicable PM emission standards	Subpart XXX reference
New or reconstructed	Submerged arc furnace	0.23 kilograms per hour per megawatt (kg/hr/MW) (0.51 pounds per hour per megawatt (lb/hr/MW) or 35 milligrams per dry standard cubic meter (mg/dscm) (0.015 grains per dry standard cubic foot (gr/dscf).	40 CFR 63.1652(a)(1) and (a)(2)
Existing	Open submerged arc furnace producing ferromanganese and operating at a furnace power input of 22 megawatts (MW) or less.	9.8 kg/hr (21.7 lb/hr)	40 CFR 63.1652(b)(1)
Existing	Open submerged arc furnace producing ferromanganese and operating at a furnace power input greater than 22 MW.	13.5 kg/hr (29.8 lb/hr)	40 CFR 63.1652(b)(2)
Existing	Open submerged arc furnace producing silicomanganese and operating at a furnace power input greater than 25 MW.	16.3 kg/hr (35.9 lb/hr)	40 CFR 63.1652(b)(3)
Existing	Open submerged arc furnace producing silicomanganese and operating at a furnace power input of 25 MW or less.	12.3 kg/hr (27.2 lb/hr)	40 CFR 63.1652(b)(4)
Existing	Semi-sealed submerged arc furnace (primary, tapping, and vent stacks) producing ferromanganese.	11.2 kg/hr (24.7 lb/hr)	40 CFR 63.1652(c)
New, reconstructed, or existing.	Metal oxygen refining process	69 mg/dscm (0.03 gr/dscf).	40 CFR 63.1652(d)
New or reconstructed	Individual equipment associated with the product crushing and screening operation.	50 mg/dscm (0.022 gr/dscf).	40 CFR 63.1652(e)(1)
Existing	Individual equipment associated with the product crushing and screening operation.	69 mg/dscm (0.03 gr/dscf).	40 CFR 63.1652(e)(2)

The 1999 NESHAP established a building opacity limit of 20 percent that is measured during the required furnace control device performance test. The rule provides an excursion limit of 60 percent opacity for one 6-minute period during the performance test. The opacity observation is focused only on emissions exiting the shop due solely to operations of any affected submerged arc furnace. In addition, blowing taps, poling and oxygen lancing of the tap hole; burndowns associated with electrode measurements; and maintenance activities associated with submerged arc furnaces and casting operations are exempt from the opacity standards specified in § 63.1653.

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[5] EPA. AP–42, 12.4. Ferroalloy Production. 10/86.

For outdoor fugitive dust sources, as defined in § 63.1652, the 1999 NESHAP requires that plants prepare and operate according to an outdoor fugitive dust control plan that describes in detail the measures that will be put in place to control outdoor fugitive dust emissions from the individual outdoor fugitive dust sources at the facility. The owner or operator must submit a copy of the outdoor fugitive dust control plan to the designated permitting authority on or before the applicable compliance date.

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

In April 2010, we issued an information collection request (ICR), pursuant to CAA section 114, to the two companies that own and operate the two known ferroalloys production facilities producing ferromanganese and silicomanganese. The ICR requested available information regarding process equipment, control devices, point and fugitive emissions, practices used to control fugitive emissions, and other aspects of facility operations. The two companies completed the surveys for their facilities and submitted the responses to us in the fall of 2010. We also requested that the two facilities conduct additional emissions tests in 2010 for certain HAP from specific processes that were considered representative of the industry. Additional emissions testing was performed for most HAP metals (e.g., manganese, arsenic, chromium, lead, nickel and mercury), hydrochloric acid (HCl), formaldehyde, and PAH. The results of these tests were submitted to the EPA in the fall of 2010 and are available in the docket for this action.

During the development of this regulation we discovered other types of ferroalloys production facilities (e.g., non-manganese ferroalloy production) that are not subject to this NESHAP. We plan to gather additional information on these other types of sources, and then evaluate whether we need to establish MACT standards for these sources.

C. What other relevant background information from previous studies on ferroalloys emissions is available?

In addition to the emissions information and risk assessment described in this preamble, other sources of publicly available data exist. Based on historical emissions data from the EPA's Toxics Release Inventory, one of the manganese ferroalloys facilities in this source category[6] has been one of the highest-emitters of manganese in the country for at least 15 years (*http://www.epa.gov/enviro/facts/tri/index.html*). Several agencies have conducted studies of the emissions from this facility and potential health effects of those emissions.

The Agency for Toxic Substances and Disease Registry (ATSDR), of the U.S. Department of Health and Human Services, along with the Ohio Department of Health and the Ohio Environmental Protection Agency conducted two health consultations in the communities surrounding this manganese ferroalloys facility between 2004 and 2007. The investigations found average ambient concentrations of manganese at levels higher than background concentrations and higher than health benchmark concentrations. More information about these studies can be found at *http://www.atsdr.cdc.gov/sites/washington_marietta/index.html.*

As a result of these findings, a health study of chronic adult exposure to ambient manganese in the communities surrounding the facility was funded by the EPA. Available results show no significant differences in blood manganese concentrations or major health outcomes between residents living near the facility and residents in a comparison town; however some subtle, subclinical motor (movement) differences were found in residents in the town with the facility.[7]

In addition, under the EPA's School Air Toxics Initiative, ambient concentrations of manganese were monitored at three schools located near the ferroalloys production facility in late 2009. At these locations, mean manganese concentrations above the health benchmark value were observed. We note that the daily monitored values were in some cases above the RfC and in some cases below. The daily values were highly variable as they were likely influenced by wind direction and speed. More information about the health benchmark value is available in section III.B. More information on the School Air Toxics Initiative can be found at *http://www.epa.gov/schoolair/index/html,* while the study including the area around this facility can be found at *http://www.epa.gov/schoolair/pdfs/MariettaTechReport.pdf.* The monitoring was conducted for the School Air Toxics Initiative; however we do present a comparison of modeled concentrations to monitored concentrations in the Risk Assessment document, which is available in the docket.

III. Analyses Performed

In this section, we describe the analyses performed to support the proposed decisions for the RTR for this source category.

A. How did we address unregulated emissions sources?

In the course of evaluating the Ferroalloys Production source category, we identified certain HAP for which we failed to establish emission standards in the original MACT. See *National Lime* v. *EPA,* 233 F. 3d 625, 634 (DC Cir. 2000) (EPA has ''clear statutory obligation to set emissions standards for each listed HAP''). Specifically, we identified and evaluated emissions standards for four HAP (or groups of HAP), described below, that are not specifically regulated in the existing 1999 MACT standard, or are only regulated for certain emissions points. As described below, for these HAP (or groups of HAP), we are proposing emissions limits pursuant to section 112(d)(2) and 112(d)(3). The results and proposed decisions based on the analyses performed pursuant to CAA section 112(d)(2) and 112(d)(3) are presented in section IV.A of this preamble.

1. Hydrochloric acid

We were unaware of the potential for hydrochloric acid (HCl) emissions when we developed the 1999 NESHAP. As a result, we did not establish standards for HCl for these sources in the 1999 NESHAP. We recently received HCl emissions data in response to the ICR. Therefore, we are proposing a standard pursuant to section 112(d)(2) and (d)(3) (as described further in section IV.A of this preamble).

2. Mercury

The 1999 NESHAP specified emissions limits for particulate metal HAP (*e.g.,* manganese, arsenic, nickel, chromium) in terms of a particulate matter emissions limit (*i.e.,* particulate matter is used as a surrogate for metal HAP that are mainly emitted in particulate form). There is no explicit standard for mercury, and a significant fraction of the mercury emissions are expected to be in gaseous mercury forms (*e.g.,* gaseous elemental mercury or gaseous oxidized mercury) with a smaller fraction in particulate form. Therefore, we are proposing a standard specifically for mercury pursuant to section 112(d)(2) and (d)(3) (as described further in section IV.A of this preamble).

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[6] Eramet Marrietta, located in Marietta, Ohio.

[7] In press: Kim Y *et al.* Motor function in adults of an Ohio community with environmental manganese exposure. 2011 Neurotoxicology, doi: 10.1016/j. neuro.2011.07.011.

3. Polycyclic Aromatic Hydrocarbons

As described above, the 1999 NESHAP only regulated particulate metal HAP emissions and did not establish standards for PAH. Since then, we have determined that electric arc furnaces emit PAH, and we are proposing a standard pursuant to section 112(d)(2) and (d)(3) (as described further in section IV.A of this preamble).

4. Formaldehyde

As described above, the 1999 NESHAP only regulated particulate metal HAP emissions and did not establish standards for formaldehyde. Since then, we have determined that electric arc furnaces emit formaldehyde, and we are proposing a standard pursuant to section 112(d)(2) and (d)(3) (as described further in section IV.A of this preamble).

B. How did we estimate risks posed by the source category?

The EPA conducted a risk assessment that provided estimates of the MIR posed by the HAP emissions from each source in the source category, the HI for chronic exposures to HAP with the potential to cause noncancer health effects, and the hazard quotient (HQ) for acute exposures to HAP with the potential to cause noncancer health effects. The assessment also provided estimates of the distribution of cancer risks within the exposed populations, cancer incidence and an evaluation of the potential for adverse environmental effects for each source category. The risk assessment consisted of seven primary steps, as discussed below. The docket for this rulemaking contains the following document which provides more information on the risk assessment inputs and models: *Draft Residual Risk Assessment for the Ferroalloys Production Source Category.* 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;[8] they are also consistent with the key recommendations contained in that report.

1. Establishing the Nature and Magnitude of Actual Emissions and Identifying the Emissions Release Characteristics

The two existing ferromanganese and silicomanganese production facilities constitute the dataset that is the basis for the risk assessment. We estimated the magnitude of emissions using data collected through the ICR. In addition to the quality assurance (QA) of the source data for the facilities contained in the dataset, we also checked the coordinates of every emission source in the dataset through visual observations using tools such as GoogleEarth and ArcView. Where coordinates were found to be incorrect, we identified and corrected them to the extent possible. We also performed QA of the emissions data and release characteristics to ensure the data were reliable and that there were no outliers.

2. Establishing the Relationship Between Actual Emissions and MACT–Allowable Emissions Levels

The emissions data in the MACT dataset include estimates of the mass of emissions actually emitted during the specified annual time period. These ''actual'' emission levels are often lower than the emission levels that a facility might be allowed to emit and still 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. This represents the highest emissions level that could be emitted by facilities without violating the MACT standards.

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 because these risks reflect the maximum level sources could emit and still comply with national emission standards. But 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. (54 FR 38044, September 14, 1989.)

For the Ferroalloys Production source category, we evaluated allowable stack emissions, based on the level of control required by the MACT standards compared to the level of reported actual emissions and available information on the level of control achieved by the emissions controls in use. Further explanation is provided in the technical document: *Draft Development of the RTR Emissions Dataset for the Ferroalloys Production Source Category,* which is available in the docket.

3. Conducting Dispersion Modeling, Determining Inhalation Exposures, and Estimating 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 of the primary risk assessment activities listed above: (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 km of the modeled sources, 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.[9] 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 of hourly surface and upper air observations for 189 meteorological stations, selected to provide coverage of the United States and Puerto Rico. A second library, of United States Census Bureau census block[10] internal point locations and populations, provides the basis of human exposure calculations (Census, 2000). 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

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[8] 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.

[9] 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).

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

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 of the HAP emitted by each 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 (μg/m^3)) by its unit risk estimate (URE), which 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 the 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. In the case of nickel compounds, to provide a health protective estimate of potential cancer risks, we used the URE value for nickel subsulfide in this assessment. Based on past scientific and technical considerations, the determination of the percent of nickel subsulfide was considered a major factor for estimating the extent and magnitude of the risks of cancer due to nickel-containing emissions. Nickel speciation information for some of the largest nickel-emitting sources (including oil combustion, coal combustion, and others) suggested that at least 35 percent of the total nickel emissions may be soluble compounds and that the URE for the mixture of inhaled nickel compounds (based on nickel subsulfide, and representative of pure insoluble crystalline nickel) could be derived to reflect the assumption that 65 percent of the total mass of nickel may be carcinogenic. Based on consistent views of major scientific bodies (i.e., National Toxicology Program in their 12th Report on Carcinogens,[11] International Agency for Research on Cancer,[12] and other international agencies)[13] that consider all nickel compounds to be carcinogenic, we currently consider all nickel compounds to have the potential of being carcinogenic to humans. The major scientific bodies mentioned above have also recognized that there are differences in toxicity and/or carcinogenic potential across the different nickel compounds. More discussion of the nickel URE can be found in the risk assessment report in the docket for this action. For this analysis, to take a more health-protective approach, we considered all nickel compounds to be as carcinogenic as nickel subsulfide in our inhalation risk assessments and have applied the IRIS URE for nickel subsulfide without a factor to reflect the assumption that 100 percent of the total mass of nickel may be as carcinogenic as pure nickel subsulfide. In addition, given that there are two URE values[14] derived for exposure to mixtures of nickel compounds, as a group, that are 2–3 fold lower than the IRIS URE for nickel subsulfide, we also consider it reasonable to use a value that is 50 percent of the IRIS URE for nickel subsulfide for providing an estimate of the lower end of a plausible range of cancer potency values for different mixtures of nickel compounds.

We also note that polycyclic organic matter (POM) (of which PAH are a subset), a carcinogenic HAP with a mutagenic mode of action, is emitted by the facilities in this source category.[15] For this compound group,[16] the age-dependent adjustment factors (ADAF) described in the EPA's *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens*[17] were applied. This adjustment has the effect of increasing the estimated lifetime risks for POM by a factor of 1.6. In addition, although only a small fraction of the total POM emissions were not reported as individual compounds, the EPA expresses carcinogenic potency for compounds in this group in terms of benzo[a]pyrene equivalence, based on evidence that carcinogenic POM has the same mutagenic mechanism of action as benzo[a]pyrene. For this reason, the EPA's Science Policy Council[18] recommends applying the *Supplemental Guidance* to all carcinogenic PAH for which risk estimates are based on relative potency. Accordingly, we have applied the ADAF to the benzo[a]pyrene equivalent portion of all POM mixtures.

Incremental individual lifetime cancer risks associated with emissions from the two facilities in the source category were estimated 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[19]) emitted by the modeled source. 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

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[11] National Toxicology Program (NTP), 2011. Report on carcinogens. 12th ed. Research Triangle Park, NC: U.S. Department of Health and Human Services (DHHS), Public Health Service. Available online at *http://ntp.niehs.nih.gov/ntp/roc/twelfth/roc12.pdf.*

[12] International Agency for Research on Cancer (IARD), 1990. IARC monographs on the evaluation of carcinogenic risks to humans. Chromium, nickel, and welding. Vol. 49. Lyons, France: International Agency for Research on Cancer, World Health Organization Vol. 49:256.

[13] World Health Organization (WHO, 1991) and the European Union's Scientific Committee on Health and Environmental Risks (SCHER, 2006).

[14] Two UREs (other than the current IRIS values) have been derived for nickel compounds as a group: one developed by the California Department of Health Services (*http://www.arb.ca.gov/toxics/id/summary/nickel_tech_b.pdf*) and the other by the Texas Commission on Environmental Quality (*http://www.epa.gov/ttn/atw/nata1999/99pdfs/healtheffectsinfo.pdf*).

[15] U.S. EPA. Performing risk assessments that include carcinogens described in the *Supplemental Guidance* as having a mutagenic mode of action. *Science Policy Council Cancer Guidelines Implementation Work Group Communication I:* Memo from W.H. Farland, dated October 4, 2005.

[16] See the *Risk Assessment for Source Categories* document available in the docket for a list of HAP with a mutagenic mode of action.

[17] U.S. EPA *Supplemental Guidance for Assessing Early-Life Exposure to Carcinogens.* EPA/630/R-3/003F, 2005. *http://www.epa.gov/ttn/atw/childrens_supplement_final.pdf.*

[18] U.S. EPA *Science Policy Council Cancer Guidelines Implementation Workgroup Communication II:* Memo from W.H. Farland, dated June 14, 2006.

[19] 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 Science Advisory Board (SAB) in their 2002 peer review of EPA's National Air Toxics Assessment (NATA) entitled, *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.*

analysis supporting the 1989 Benzene NESHAP (54 FR 38044) 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 either the EPA reference concentration (RfC), defined as ''an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime,'' or, in cases where an RfC from the EPA's IRIS database is not available, the EPA will utilize the following prioritized sources for our chronic dose-response values: (1) The Agency for Toxic Substances and Disease Registry Minimum Risk Level, which is defined as ''an estimate of daily human exposure to a substance that is likely to be without an appreciable risk of adverse effects (other than cancer) over a specified duration of exposure''; (2) the CalEPA Chronic Reference Exposure Level (REL), which is defined as ''the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration''; and (3), as noted above, in cases where 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 those dose-response values in place of or in concert with other values.

Screening estimates of acute exposures and risks were also evaluated for each of the HAP at the point of highest off-site exposure for each facility (i.e., not just the census block centroids), assuming that a person is located at this spot at a time when both the peak (hourly) emission rate and worst-case dispersion conditions (1991 calendar year data) occur. The acute HQ is the estimated acute exposure divided by the acute dose-response value. In each case, acute HQ values were calculated 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 emission 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.'' Acute REL values are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. Acute REL values are designed to protect the most sensitive individuals in the population by 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.

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/opptintr/aegl/pubs/sop.pdf)*,[20] ''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.'' 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.'' The document lays out the purpose and objectives of AEGL by stating (page 21) 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.'' In detailing the intended application of AEGL values, the document states (page 31) 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.''

The AEGL–1 value is then specifically defined as ''the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.'' The document also notes (page 3) 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.'' 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.''

ERPG values are derived for use in emergency response, as described in the American Industrial Hygiene Association's document entitled, *Emergency Response Planning Guidelines (ERPG) Procedures and Responsibilities* (*http://www.aiha.org/1documents/committees/ERPSOPs2006.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.''[21] 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.'' 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 1 hour without experiencing or

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[20] NAS, 2001. *Standing Operating Procedures for Developing Acute Exposure Levels for Hazardous Chemicals*, page 2.

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

developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.''

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, higher severity level AEGL–2 or ERPG–2 values are compared to our modeled exposure levels to screen for potential 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. For the Ferroalloys Production source category hourly emissions estimates were available for individual emissions points, so we did not use the default factor of 10. Using emission test data, hourly emission rates were developed for those processes considered to operate continuously (i.e., steady-state operations for 8,760 hours per year) and for those processes considered to operate intermittently (i.e., non-steady-state operations for less than 8,760 hours per year). A discussion of the hourly emissions estimates is provided in the *Methodology for Estimation of Maximum Hourly Emissions for Ferroalloy Sources,* which is available in the docket for this action.

As part of our acute risk assessment process, for cases where acute HQ values from the screening step were less than or equal to 1, acute impacts were deemed negligible and no further analysis was performed. In cases where an acute HQ from the screening step was greater than 1, additional site-specific data were considered to develop a more refined estimate of the potential for acute impacts of concern. For this source category, the data refinements employed consisted of using the site-specific facility layout to distinguish facility property from an area where the public could be exposed. These refinements are discussed in the draft risk assessment document, which is available in the docket for this source category. 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 emission 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. However, we recognize that having this level of data is rare, hence our use of the multiplier approach.

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,[22] 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[23] for HAP have been developed, we consider additional acute values (i.e., occupational and international values) to provide a more complete risk characterization.

4. Conducting Multipathway Exposure and Risk Screening

The potential for significant human health risks due to exposures via routes other than inhalation (i.e., multipathway exposures) and the potential for adverse environmental impacts were evaluated in a two-step process. In the first step, we determined whether any facilities emitted any PB–HAP (HAP known to be persistent and bio-accumulative in the environment). There are 14 PB–HAP compounds or compound classes identified for this screening in the EPA's Air Toxics Risk Assessment Library (available at *http://www.epa.gov/ttn/fera/risk_atra_vol1.html*). They are cadmium compounds, chlordane, chlorinated dibenzodioxins and furans, dichlorodiphenyldichloroethylene, heptachlor, hexachlorobenzene, hexachlorocyclohexane, lead compounds, mercury compounds, methoxychlor, polychlorinated biphenyls, POM, toxaphene and trifluralin.

Because one or more of these PB–HAP are emitted by at least one facility in the source category, we proceeded to the second step of the evaluation. In this step, we determined whether the facility-specific emission rates of each of the emitted PB–HAP were large enough to create the potential for significant non-inhalation human or environmental risks under reasonable worst-case conditions. To facilitate this step, we have developed emission rate thresholds for each PB–HAP using a hypothetical worst-case 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 hypothetical screening scenario was subjected to a sensitivity analysis to ensure that its key design parameters were established such that environmental media concentrations were not underestimated (*i.e.,* to minimize the occurrence of false negatives or results that suggest that risks might be acceptable when, in fact, actual risks are high) and to also minimize the occurrence of false positives for human health endpoints. We call this application of the TRIM.FaTE model TRIM–Screen. The facility-specific emission rates of each of the PB–HAP in the source category were compared to the TRIM–Screen emission threshold values for each of the PB–HAP identified in the source category datasets to assess the potential for significant human health risks or environmental risks via non-inhalation pathways.

5. Assessing Risks Considering Emissions Control Options

In addition to assessing baseline inhalation risks and screening for potential multipathway risks, we also estimated risks considering the potential emissions reductions that would be achieved by the main control options

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

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

under consideration. In these cases, the expected emissions reductions were applied to the specific HAP and emissions points in the source category dataset to develop corresponding estimates of risk reductions.

6. Conducting Other Risk-Related Analyses: Facilitywide 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. However, for the Ferroalloys Production source category, there are no other significant HAP emissions sources operating at present. Thus, there was no need to perform a separate facility wide risk assessment.

7. Considering Uncertainties in Risk Assessment

Uncertainty and the potential for bias are inherent in all risk assessments, including those performed for the source category addressed in this proposal. Although uncertainty exists, we believe that our approach, which used conservative tools and assumptions, ensures that our decisions are health-protective. A brief discussion of the uncertainties in the emissions dataset, dispersion modeling, inhalation exposure estimates and dose-response relationships follows below. A more thorough discussion of these uncertainties is included in the risk assessment documentation (*Draft Residual Risk Assessment for the Ferroalloys Production Source Category*) available in the docket for this action.

a. Uncertainties in the Emissions Dataset

Although the development of the RTR 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 were made in estimating emissions values and other factors. The emission estimates considered in this analysis generally are annual totals for certain years that do not reflect short-term fluctuations during the course of a year or variations from year to year.

The estimates of peak hourly emissions rates from stacks for the acute effects screening assessment were based on actual maximum hourly emissions estimates for individual emission points, which is intended to account for emissions fluctuations due to normal facility operations.

b. Uncertainties in Dispersion Modeling

While the analysis employed the EPA's recommended regulatory dispersion model, AERMOD, we recognize that there is uncertainty in ambient concentration estimates associated with any model, including AERMOD. In circumstances where we had to choose between various model options, where possible, model options (*e.g.,* rural/urban, plume depletion, chemistry) were selected to provide an overestimate of ambient air concentrations of the HAP rather than underestimates. However, because of practicality and data limitation reasons, some factors (*e.g.,* meteorology, building downwash) have the potential in some situations to overestimate or underestimate ambient impacts. For example, meteorological data were taken from a single year (1991) and facility locations can be a significant distance from the site where these data were taken. Despite these uncertainties, we believe that at off-site locations and census block centroids, the approach considered in the dispersion modeling analysis should generally yield overestimates of ambient HAP concentrations.

c. Uncertainties in Inhalation Exposure

The effects of human mobility on exposures were not included in the assessment. Specifically, short-term mobility and long-term mobility between census blocks in the modeling domain were not considered.[24] The assumption of not considering short or long-term population mobility does not bias the estimate of the theoretical MIR, 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.,* one in 10,000 or one in one 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.

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 emissions 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 United States 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 rare cases, where a facility maintains or increases its emissions levels beyond 70 years, residents live beyond 70 years at the same location, and the residents spend most of their days at that location, then the risks could potentially be underestimated. Annual cancer incidence estimates from exposures to emissions from these sources would not be affected by uncertainty in the length of time emissions sources operate.

The exposure estimates used in these analyses assume chronic exposures to ambient 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, these levels are typically lower. This factor has the potential to result in an overstatement of 25 to 30 percent of exposures.[25]

In addition to the uncertainties highlighted above, there are several factors specific to the acute exposure assessment that should be highlighted. The accuracy of an acute inhalation exposure assessment depends on the simultaneous occurrence of

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[24] 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.

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

independent factors that may vary greatly, such as hourly emissions rates, meteorology, and human activity patterns. In this assessment, we assume that individuals remain for 1 hour at the point of maximum ambient concentration as determined by the co-occurrence of peak emissions and worst-case meteorological conditions. 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 of worst-case impact.

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 documentation 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).[26] In some circumstances, the true risk could be as low as zero; however, in other circumstances the risk could be greater.[27] 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 other uses (*e.g.,* priority-setting or expected benefits analysis).

Chronic non-cancer reference (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,[28] *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 peer-reviewed reference values for cancer and noncancer effects for all pollutants emitted by the sources included in this assessment, some HAP continue to have no reference values for cancer or chronic noncancer or acute

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

[27] 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.

[28] 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 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.*

effects. Because exposures to these pollutants cannot be included in a quantitative risk estimate, an understatement of risk for these pollutants at environmental exposure levels is possible. For a group of compounds that are either unspeciated or do not have reference values for every individual compound (*e.g.,* glycol ethers), we conservatively use the most protective reference value to estimate risk from individual compounds in the group of compounds.

Additionally, chronic reference values for several of the compounds included in this assessment are currently under the EPA IRIS review and revised assessments may determine that these pollutants are more or less potent than the current value. We may re-evaluate residual risks for the final rulemaking if these reviews are completed prior to our taking final action for this source category and a dose-response metric changes enough to indicate that the risk assessment supporting this notice may significantly understate human health risk.

e. Uncertainties in the Multipathway and Environmental Effects Assessment

We generally assume that when exposure levels are not anticipated to adversely affect human health, they also are not anticipated to adversely affect the environment. For each source category, we generally rely on the site-specific levels of PB–HAP emissions to determine whether a full assessment of the multipathway and environmental effects is necessary. Our screening methods use worst-case scenarios to determine whether multipathway impacts might be important. The results of such a process are biased high for the purpose of screening out potential impacts. Thus, when individual pollutants or facilities screen out, we are confident that the potential for multipathway impacts is negligible. On the other hand, when individual pollutants or facilities do not screen out, it does not mean that multipollutant impacts are significant, only that we cannot rule out that possibility.

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

In evaluating and developing standards under section 112(f)(2), as discussed in section I.B of this preamble, 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)[29] of approximately one in 10 thousand [*i.e.,* 100 in one million]'' (54 FR 38045). In the second step of the process, the EPA sets the standard at a level that provides an ample margin of safety ''in consideration of all health information, including the number of persons at risk levels higher than approximately one in one million, as well as other relevant factors, including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision.'' (*Id.*)

In past residual risk actions, the EPA has presented and considered a number of human health risk metrics associated with emissions from the category under review, including: the MIR; the numbers of persons in various risk ranges; cancer incidence; the maximum non-cancer HI; and the maximum acute non-cancer hazard (72 FR 25138, May 3, 2007; 71 FR 42724, July 27, 2006). In most recent proposals (75 FR 65068, October 21, 2010; 75 FR 80220, December 21, 2010; and 76 FR 29032, May 19, 2011), the EPA also presented and considered additional measures of health information, such as estimates of the risks associated with the maximum level of emissions which might be allowed by the current MACT standards (see, *e.g.,* 75 FR 65068, October 21, 2010 and 75 FR 80220, December 21, 2010). The EPA also discussed and considered risk estimation uncertainties. The EPA is providing this same type of information in support of the proposed actions described in this **Federal Register** notice.

The Agency is considering all available health information to inform our determinations of risk acceptability and ample margin of safety under CAA section 112(f). Specifically, 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). Similarly, with regard to making the ample margin of safety determination, as stated in the Benzene NESHAP ''[in the ample margin decision, 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 Agency acknowledges that the Benzene NESHAP provides flexibility regarding what factors the EPA might consider in making determinations and how these factors might be weighed for each source category. In responding to comment on our policy under the Benzene NESHAP, the EPA explained that: ''The policy chosen by the Administrator permits consideration of multiple measures of health risk. Not only can the MIR figure be considered, but also incidence, the presence of non-cancer health effects, and the uncertainties of the risk estimates. In this way, the effect on the most exposed individuals can be reviewed as well as the impact on the general public. These factors can then be weighed in each individual case. This approach complies with the Vinyl Chloride mandate that the Administrator ascertain an acceptable level of risk to the public by employing [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' '' (54 FR at 38057).

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).

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

The EPA wishes to point out that certain health information has not been considered to date in making residual risk determinations. In assessing risks to populations in the vicinity of the facilities in each category, we present estimates of risk associated with HAP emissions from the source category alone (source category risk estimates), and generally we have also assessed risks due to HAP emissions from the entire facility at which the covered source category is located (facilitywide risk estimates). We have not, however, attempted to characterize the risks associated with all HAP emissions impacting the populations living near the sources in these categories. That is, 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. This is 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 EPA SAB advised us ''* * * 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.''[30]

Although we are interested in placing source category and facilitywide 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. At this point, we believe that such estimates of total HAP risks will have significantly greater associated uncertainties than for the source category or facilitywide estimates, and hence would compound the uncertainty in any such comparison. This is because we have not conducted a detailed technical review of HAP emissions data for source categories and facilities that have not previously undergone an RTR review or are not currently undergoing such review. We are requesting comment on whether and how best to estimate and evaluate total HAP exposure in our assessments, and, in particular, on whether and how it might be appropriate to use information from the EPA's NATA to support such estimates. We are also seeking comment on how best to consider various types and scales of risk estimates when making our acceptability and ample margin of safety determinations under CAA section 112(f).

D. 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 1999 NESHAP was promulgated. In cases where the technology review identified such developments, we conducted an analysis of the technical feasibility of applying these developments, along with the estimated impacts (costs, emissions reductions, risk reductions, etc.) of applying these developments. We then made decisions on whether it is necessary to propose amendments to the 1999 NESHAP to require any of the identified developments.

Based on our analyses of the data and information collected by the ICR and our general understanding of the industry and other available information on potential controls for this industry, we identified several potential developments in practices, processes, and control technologies. For the purpose of 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 1999 NESHAP.
- Any improvements in add-on control technology or other equipment (that were identified and considered during development of the 1999 NESHAP) that could result in significant additional emissions reduction.
- Any work practice or operational procedure that was not identified or considered during development of the 1999 NESHAP.
- 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 1999 NESHAP.

In addition to reviewing the practices, processes, or control technologies that were not considered at the time we developed the 1999 NESHAP, we reviewed a variety of data sources in our evaluation of whether there were additional practices, processes, or controls to consider for the Ferroalloys Production industry. Among the data sources we reviewed were the NESHAP for various industries that were promulgated after the 1999 NESHAP. 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 possibly be applied to emissions sources in the Ferroalloys 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 other information sources, such as State or local permitting agency databases and industry-supported databases.

E. What other issues are we addressing in this proposal?

In addition to the analyses described above, we also reviewed other aspects of the MACT standards for possible revision as appropriate and necessary. Based on this review we have identified aspects of the MACT standards that we believe need revision. This includes proposing revisions to the startup, shutdown, and malfunction (SSM) provisions of the MACT rule in order to ensure that they are consistent with a recent court decision in *Sierra Club* v. *EPA,* 551 F. 3d 1019 (DC Cir. 2008). In addition, we are proposing various other changes to monitoring and testing requirements to ensure that this rule includes the measures needed to ensure continuous compliance at major sources subject to the revised NESHAP for the Ferroalloys Production source category.

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[30] 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 entitled, *EPA's Actions in Response to the Key Recommendations of the SAB Review of RTR Risk Assessment Methodologies.*

Our analyses and proposed decisions related to SSM and other testing and reporting requirements for this source category are presented in section IV.E of this preamble.

IV. Analytical Results and Proposed Decisions

This section of the preamble provides the results of our review of the MACT rule including the RTR for the Ferroalloys Production source category and our proposed decisions concerning changes to the 1999 NESHAP.

A. What are the results of our analyses and proposed decisions regarding unregulated pollutants?

In this section, we describe how we addressed unregulated emissions, including how we calculate MACT floors, how we account for variability in those floor calculations, and how we consider beyond the floor options. As described previously, the CAA section 112(d) requires the EPA to promulgate national technology-based emission standards for hazardous air pollutants (NESHAP) for listed source categories, including this source category. For more information on this analysis, see the *Draft MACT Floor Analysis for the Ferroalloys Production Source Category* which is available in the docket for this proposed action. Based on the ICR data that we collected, we conducted a MACT Floor analysis.

Section 112(d)(3)(B) of the CAA requires that the MACT standards for existing sources be at least as stringent as the average emissions limitation achieved by the best performing five sources (for which the Administrator has or could reasonably obtain emissions information) in a category with fewer than 30 sources. The Ferroalloy Production source category consists of fewer than 30 sources. Where, as here, there are five or fewer sources, we base the MACT floor limit on the average emissions limitation achieved by those sources for which we have data.

The EPA must exercise its judgment, based on an evaluation of the relevant factors and available data, to determine the level of emissions control that has been achieved by the best performing sources under variable conditions. It is recognized in the case law that the EPA may consider variability in estimating the degree of emissions reduction achieved by best-performing sources and in setting MACT floors. See *Mossville Envt'l Action Now* v. *EPA,* 370 F.3d 1232, 1241–42 (DC Cir 2004) (holding the EPA may consider emissions variability in estimating performance achieved by best-performing sources and may set the floor at a level that a best-performing source can expect to meet ''every day and under all operating conditions'').

With regard to data used to determine the MACT limits, we received detailed emissions data for multiple HAP from one furnace and one crushing system baghouse at each plant (collected at the outlet of the control device) based on an ICR sent to the two companies in 2010. We are soliciting additional emissions data for the operating furnaces and crushing system baghouses for which we do not have data and any other emissions sources at ferroalloys production facilities including available information on the quantity and composition of process fugitive emissions.

1. Mercury Emissions

The raw materials used to produce ferroalloys contain various amounts of mercury, which is emitted during the smelting process. These mercury emissions are derived primarily from the manganese ore although there may be trace amounts in the coke or coal used in the smelting process. While some of the mercury that is in particulate or oxidized forms is captured by the particulate control devices, the more volatile elemental mercury is largely emitted to the atmosphere. We found that mercury emissions are emitted from the furnaces as measured during the ICR test program (estimated to be 540 pounds per year (lb/yr) at one plant and 140 lb/yr at the other plant). Pursuant to CAA section 112(d)(2) and 112(d)(3), we are proposing to revise the 1999 NESHAP to include emission limits for mercury.

As discussed above, the MACT floor limit is calculated based on the average performance of the units in each category plus an amount to account for these units' variability. To account for variability in the operation and emissions, the stack test data were used to calculate the average emissions and the 99 percent upper predictive limit (UPL) to derive the MACT floor limit. For more information on how we calculated the MACT floors and other emission limits, see the Ferroalloys Production MACT Floor Analysis document, which is available in the docket.

Using this method, the MACT floor (or 99 percent UPL) for exhaust mercury concentrations from existing furnaces is 80 μg/dscm at 2 percent carbon dioxide (CO_2). This MACT floor limit is higher than the actual emissions measured during the ICR performance tests at each plant. Therefore, we anticipate that both of the existing sources would be able to meet this limit without installing additional controls.

With regard to new sources, as described above, the MACT floor for new sources cannot be less stringent than the emissions performance that is achieved in practice by the best-controlled similar source. A variability analysis similar to that used for existing sources was then performed to calculate a 99 percent UPL using the three run test data from the top source. For this source category, we calculate that the UPL MACT floor limit for new sources is 16 μg/dscm at 2 percent CO_2. This limit is based on the performance of the best performing source.

The next step in establishing MACT standards is the beyond the floor analysis. In this step, we investigate other mechanisms for further reducing HAP emissions that are more stringent than the MACT floor level of control in order to ''require the maximum degree of reduction in emissions'' of HAP. In setting such standards, section 112(d)(2) requires the Agency to consider the cost of achieving the additional emission reductions, any non-air quality health and environmental impacts, and energy requirements. Historically, these factors have included factors such as solid waste impacts of a control, effects of emissions on bodies of water, as well as the energy impacts.

As described below, we considered beyond-the-floor control options to further reduce emissions of mercury. Because of our limited data set, we considered setting a MACT limit for existing sources based on the performance of the best performing source (*i.e.,* based upon the test data used to calculate the MACT floor for new sources) such that the MACT limit for existing sources would be the same as the UPL MACT limit for new sources (*i.e.,* 16 μg/dscm). Under this option, the best performing source would need no additional controls to meet the limit, since their current performance defines the new source limit. With regard to the other facility in the source category, as described below, we believe this limit could be achieved by the addition of an activated carbon injection system, which is a proven technology for mercury control. Compliance would be demonstrated by periodic performance testing and continuous parameter monitoring.

In evaluating a beyond the floor option, we evaluate, among other things, the costs of achieving additional emission reductions beyond the floor level of control. No facilities in the source category use add-on control devices or work practices to limit mercury emissions beyond what is achieved as co-control of the emissions with the particulate matter control device. However, we identified both carbon bed technology and activated carbon injection as commercially available mercury emission reduction techniques. Carbon bed technology (which is one of the primary control devices used at Industrial Gold Production facilities in the U.S. to minimize mercury emissions, as described in the proposed rule for that category[31]) does not appear to be a viable technology to control the large volumes of airflow generated by the electric arc furnaces in the Ferroalloys Production source category. The carbon bed technology is applicable to gas streams with low volumes of airflow, and is characterized with relatively high pressure drops. Accordingly this technology is not used in industries with high volumes of airflow, such as industrial boilers and power plants.

In contrast, activated carbon injection has been used to control mercury emissions at various types of facilities that have large volumes of airflow including some coal-fired power plants, waste incinerators and cement kilns. Based on available information, activated carbon injection appears to be a technologically feasible control for mercury for these larger volume combustion sources. Mercury reductions of up to 90 or 95 percent have been reported at these other sources and should also be achievable at ferroalloys production facilities. Based on data and information on these mercury controls for other combustion sources (such as utility boilers, incinerators and cement kilns), and based on our experience with these controls, we conclude that activated carbon injection is a viable control technology for the Ferroalloys Production source category.

Activated carbon injection can be installed upstream or downstream of an existing particulate matter control device. In cases where a source is concerned about potential impacts of waste carbon on the source's waste stream and resulting disposal options or the ability to sell or reuse baghouse dust, the source can install the activated carbon injection downstream of the particulate matter control device with a separate polishing baghouse to collect the carbon. In other cases, the source can install the activated carbon injection upstream of the particulate matter control device and use the existing particulate control device to remove the carbon from the airstream.

We reviewed facility specific control options that included putting the mercury controls downstream of the existing furnace baghouse to avoid the potential issues with sale or reuse of baghouse dust associated with upstream controls. Under this scenario, the activated carbon injection system would be followed by a ''polishing'' baghouse to capture the activated carbon for disposal. In the case of the existing furnace scrubber, we assumed the source could put the activated carbon injection system upstream of the scrubber, the carbon would be captured by the scrubber and the resulting sludge treated according to the existing treatment process at the plant. Based on discussion[32] with a vendor and other control technology experts, we do not believe that the resulting carbon waste in either scenario would trigger waste disposal concerns. We request comment on these assumptions.

We estimate that under this beyond the floor option described above (*i.e.,* a proposed limit of 16 μg/dscm), that one facility would need to install additional controls such as activated carbon injection to meet this limit, and that this would achieve about 420 pounds of reduction per year in mercury emissions. The capital costs are estimated to be $1.7 million, annualized capital and operating costs to be $1.4 million, with an overall cost-effectiveness of $3,300 per pound. The general range of costs for mercury controls from other MACT rules has been about $1,250 to $55,200 per pound of mercury removed (76 FR 25075, May 3, 2011). The EPA requests information on other control technologies available to Ferroalloys Production manufacturers to reduce mercury emissions. Other controls might include process changes, substitution of materials, collection or enclosure systems, work practices, or combinations of such methods; which reduce the volume of mercury emissions from existing sources.

It is important to note that there is no bright line for determining cost-effectiveness. Each rulemaking is different and various factors must be considered. Nevertheless, the cost-effectiveness of mercury controls in this proposed rule for Ferroalloys Production is near the lower end of the range. Some of the factors we consider in determining the costs of control technologies under section 112(d)(2) include, but are not limited to the following: total capital costs; annual costs; and costs compared to total revenues (*e.g.,* costs to revenue ratios). Other factors besides cost are considered into our decision. For example, whether the standards significantly impact one or more small businesses, whether the controls would significantly impact production, and whether, and to what extent, the controls result in adverse impacts to other media (*e.g.,* hazardous waste issues). We propose that these mercury controls are feasible for the Ferroalloys Production source category from a technical standpoint and are cost effective. We are proposing a MACT standard for mercury emissions of 16 μg/dscm for both existing and new sources under the authority of sections 112(d)(2) and (d)(3). To meet this proposed limit, we have preliminarily determined that activated carbon injection is feasible to implement for the Ferroalloys Production source category from a technical standpoint and that control costs fall within the range of other mercury controls in other MACT rules. More information regarding how the MACT standards were calculated and the costs is provided in Ferroalloys Production MACT Floor and Cost Memos, which are available in the docket for this rulemaking.

We are requesting comment on the proposed standard of 16 μg/dscm for mercury. We also seek comments and information on our conclusion that activated carbon injection technology to meet the mercury emissions limit for this source category is technically and economically feasible. Moreover, we seek comments on the factors related to costs and economics (such as those described in the paragraph above) regarding the feasibility and costs of activated carbon injection for this industry. We also seek comments on other possible controls that could be effective to reduce mercury emissions beyond the floor, including the amount and cost of the resulting emissions reductions. Furthermore, we seek comment on whether work practices to minimize mercury emissions, such as switching to manganese ores with low mercury content, could be technically and economically feasible.

Moreover, we request comment on whether there is a basis to subcategorize manganese production operations for mercury. For example, is there a basis on which to subcategorize ferromanganese production and silicomanganese production processes? Although we are requesting comment on subcategorization, we do not believe that subcategorization would have any substantive effect on the resulting standards or the costs of controls since

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[31] National Emission Standards for Hazardous Air Pollutants: Gold Mine Ore Processing and Production Area Source Category. Proposed Rule (75 FR 22470);

[32] Conversation with D. Lipscomb, Albemarle. August 22, 2011.

there would be no change in the costs and feasibility of mercury controls evaluated for these sources.

We are proposing that any source installing activated carbon injection would be required to continuously monitor the carbon injection rate into the airstream being controlled. We request comment on the level of variability in the carbon injection rate that should be allowed, and what percent decrease in the rate should be considered significant.

We also propose that sources monitor the mercury content in the manganese ore. Specifically, we propose that the determination of a significant increase in mercury content would be that the 12-month rolling weighted average mercury concentration based on monthly sampling in the manganese ore increases by 10 percent or more compared to the baseline weighted average mercury concentration. If that limit is exceeded, the source would be required to readjust the carbon injection rate as specified in the source's monitoring plan or retest within 30 days if there is not a dedicated mercury control device. If a new ore is added, sampling would be required as well.

We request comment on this ore monitoring provision. We are especially interested in any data that would show the variability in mercury concentration between different ore samples from the same location and the variability of the types of ores used in manganese production. If ore type and mercury content are demonstrated to be stable, we might consider reducing the frequency of sampling/calculations to quarterly or less.

2. Polycyclic Aromatic Hydrocarbons (PAHs)

PAH emissions are products of incomplete combustion from the smelting operation, and a subset of the listed HAP POM. Some of these emissions are likely to be in particulate form, but a significant portion is expected to be in a gaseous form. Therefore, the existing particulate matter control devices only achieve partial control of these compounds. No existing facilities in the source category control PAH or use work practices to limit emissions of PAH emissions specifically. However, under today's proposal, these pollutants would be controlled with the same activated carbon injection technology as mercury. Because of this, emission reductions could be achieved via co-control at no additional costs. Pursuant to CAA section 112(d)(2) and 112(d)(3), we are proposing to revise the 1999 NESHAP to include an emission limit for PAH.

We have stack test data from only one furnace for PAH emissions. As such, the MACT floor would be based on the performance level achieved at that furnace (*i.e.,* the average emissions of that furnace plus an amount to account for variability). Based on these data and applying the 99 percent UPL, we calculate that the MACT floor limit for PAHs would be 887 μg/dscm. We also evaluated control performance that could be achieved via co-control of mercury emissions with activated carbon injection as a beyond-the-floor option. Based on information from carbon vendors, an activated carbon system that is designed to achieve a 90 percent reduction in mercury emissions (which we expect would be applied to meet the proposed mercury standard discussed above) should also achieve a high degree of reduction in PAH with no additional costs. Assuming a 90 percent reduction from the calculated 99 percent UPL of 887 μg/dscm, the resulting limit would be 89 μg/dscm. Thus, a proposed limit for PAHs of 89 μg/dscm could be achieved with the same controls needed for mercury with no additional costs.

Therefore, pursuant to CAA sections 112(d)(2) and (d)(3), we are proposing to revise the 1999 NESHAP to include an emission limit for PAH of 89 μg/dscm for new and existing sources.

3. Hydrochloric acid

Hydrochloric acid (HCl) is a product of combustion, and the level of emissions is dictated by the chlorine content of the coal or coke used as a reducing agent in the smelting process. Based on test data from the ICR, we estimate that the two facilities in this source category emit 6 to 11 tpy of HCl. While these levels of emissions are nontrivial, they are relatively low compared to some other types of combustion sources. The primary reason for this is that manganese producers use coke instead of coal as the primary reducing agent in the smelting operation. Because coke is a refined product, much of the original chlorine content in the coal is removed in the coking process, which greatly reduces potential emissions. Second, one of the five furnaces at these plants is equipped with a scrubber, which provides co-control of particulate matter and HCl emissions. Notwithstanding the relatively low HCl emissions from facilities in this source category, section 112(d) requires us to set MACT for HAP emitted from the source category. Pursuant to CAA section 112(d)(2) and 112(d)(3), we are proposing to revise the 1999 NESHAP to include emission limits for HCl.

As discussed above, the MACT floor limit is calculated based on the average performance of the units in each category plus an amount to account for these units' variability. To account for variability in the operation and emissions, the stack test data were used to calculate the average emissions and the 99 percent UPL to derive the MACT floor limit. However, a number (50 percent) of the individual data points were reported as below the applicable test detection limits.[33] The following discussion describes how we handle such data in our MACT calculations. Also, as described below, we request comment on how this uncertainty might influence establishing an emission limit instead of a work practice standard.

Test method measurement imprecision is a contributor to the variability of a set of emissions data. One element is associated with method detection capabilities and a second is a function of the measurement value. Measurement imprecision is proportionally highest for values measured below or near a method's detection level and proportionally lower for values measured above the method detection level.

The probability procedures applied in calculating the MACT floor or beyond the floor emissions limit inherently and reasonably account for emissions data variability including measurement imprecision when the database represents multiple tests from multiple emissions units for which all of the data are measured significantly above the method detection level. This is less true when the database includes some emissions occurring below method detection capabilities that are reported as the method detection level values.

The EPA's guidance to facilities for reporting pollutant emissions in response to the ICR data collection specified the criteria for determining test-specific method detection levels. Those criteria ensure that there is only about a 1 percent probability of an error in deciding that the pollutant measured at the method detection level is present when in fact it was absent. Such a probability is also called a false positive or an alpha, Type I, error. Because of sample and emissions matrix effects, laboratory techniques, sample size, and other factors, method detection levels normally vary from test to test for any specific test method and pollutant measurement. The expected

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[33] We conducted this analysis for all measured pollutant according to the following method when non detects were reported. However only the hydrochloric acid and formaldehyde data needed a detection limit correction to adequately account for variability, as described below.

measurement imprecision is 40 to 50 percent or greater at levels measured at the method detection level or less. The expected measurement imprecision decreases to 10 to 15 percent for values measured at a level about three times the method detection level or greater.[34]

Also in accordance with our guidance, source owners identified emissions data which were measured below the method detection level and reported those values as equal to the method detection level as determined for that test. An effect of reporting data in this manner is that the resulting database is somewhat truncated at the lower end of the measurement range (*i.e.*, no values reported below the test-specific method detection level). A MACT floor or beyond the floor emissions limit based on a truncated database or otherwise including values measured near the method detection level may not adequately account for measurement imprecision contribution to the data variability.

We applied the following procedures to account for the effect of measurement imprecision associated with a database that includes method detection level data. The following process also addresses the concerns associated with use of a small data set, such as the Ferroalloys Production data set for HCl. As a first step, we reviewed an HCl emissions data set for the industrial boilers rule, which represents several hundred emissions tests used in the floor calculations (*i.e.*, best performers) for the boilers rule to determine typical method detection levels. We have data from multiple industrial boilers tests and used those data to confirm that method detection levels that testers reported were as good as or better (*i.e.*, lower) than the values reported in the method. We presume that data for the best performing units also reflect the capabilities of high quality testing companies and laboratories. Further, the method detection levels calculated from larger data sets are more representative of the inherent measurement variability both within and between testing companies than the limited Ferroalloys Production dataset. We believe that emissions tests conducted with these methods for most combustion operations (*e.g.*, fossil fuel, biomass, and waste fired units; brick and clay kilns; Portland cement kilns), including ferroalloys production, should produce method detection levels very similar to the level of 60 µg/dscm that is the result of this review.

The second step in the process was to calculate three times the RDL and compare that value to the calculated MACT floor or beyond the floor emissions limit. We use the multiplication factor of three to approximate a 99 percent upper confidence interval for a data set of seven or more values. If three times the RDL was less than the calculated MACT floor emissions limit calculated from the UPL, we would conclude that measurement variability was adequately addressed. The calculated MACT floor or beyond the floor emissions limit would need no adjustment. If, on the other hand, the value equal to three times the RDL was greater than the UPL, we would conclude that the calculated MACT floor or beyond the floor emissions limit does not account entirely for measurement variability. If indicated, we substituted the value equal to three times the RDL to apply as the adjusted MACT floor or beyond the floor emissions limit. This adjusted value would ensure measurement variability is adequately addressed in the MACT floor or the beyond the floor emissions limit.

For HCl, three times the RDL was less than the calculated 99 percent UPL for exhaust HCl concentration from existing furnaces. Thus, for existing sources, the MACT floor for HCl is set at the UPL, or 809 µg/dscm corrected to 2 percent CO_2.

Consistent with CAA section 112(d)(3), the MACT floor for new sources cannot be less stringent than the emissions control that is achieved in practice by the best-controlled similar source. The 99 percent UPL calculated for HCl based on the best performing source is less stringent than the MACT floor for HCl at existing furnaces. We determined that the use of the best performing source UPL is not appropriate in this situation because the high variability and small data pool would result in a new source MACT floor limit that is less stringent than the limit based on the UPL calculated from the larger data pool for existing sources. Given that the 99 percent UPL for new sources is higher than the 99 percent UPL for existing sources, we determined that the MACT limit for new sources should be equal to the MACT limit for existing sources.

We then considered a beyond-the-floor option to further reduce emissions of HCl at existing sources based on application of additional add-on control devices, such as lime injection, but their use is not indicated given the high costs of installing and operating such controls. There is also concern that use of this technology could prevent the current practice of reusing or selling baghouse dust and the resulting waste reduction benefits. See the Draft MACT Floor Analysis for the Ferroalloys Production Source Category in the docket for more discussion of this topic.

Therefore, pursuant to CAA sections 112(d)(2) and 112(d)(3), we are proposing to revise the 1999 NESHAP to include emission limits for new and existing sources for HCl of 809 µg/dscm. At this level, we do not anticipate that either source would be required to install controls to meet the limits. For more information on how these limits were derived, see the Draft MACT Floor Analysis for the Ferroalloys Production Source Category. As described above, there are some measurements (*i.e.*, 50 percent) reported as below the method detection level. Because of the potential uncertainty in basing a limit partially on non-detect values, we considered the possibility of proposing work practice standards such as a limit on the amount of coal (the primary source of chlorine in the raw materials) in lieu of numerical emission limits. We request comment on whether this or other work practices might be appropriate.

4. Formaldehyde

Formaldehyde emissions are also products of incomplete combustion from the smelting operation. Based on test data from the ICR, we estimate that the two facilities in this source category emit approximately 2 tpy of formaldehyde. Pursuant to CAA section 112(d)(2) and 112(d)(3), we are proposing to revise the 1999 NESHAP to include emission limits for formaldehyde.

The measured average formaldehyde emissions ranged from 57 to 78 µg/dscm corrected to 2 percent CO_2. Because the formaldehyde emissions data included some data points (50 percent) reported as below the detection limit, we employed a version of the methodology used for HCl to determine the MACT floor. However, in this case we lack the underlying large data set of formaldehyde method detection limits that we had for HCl method detection limits. In this case, the first step was to define a method detection level that is representative of the data used in defining the best performers for the inclusive source category (*i.e.*, combined data for all subcategories). We identified all of the available reported pollutant specific method detection levels and calculated the arithmetic mean value. We deemed the resulting mean of the method detection levels as the (RDL). Three times the RDL was

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[34] American Society of Mechanical Engineers, Reference Method Accuracy and Precision (ReMAP): Phase 1, Precision of Manual Stack Emission Measurements, CRTD Vol. 60, February 2001.

greater than the calculated 99 percent UPL for exhaust formaldehyde concentrations from existing furnaces, resulting in a MACT floor of three times the RDL, or 201 µg/dscm at 2 percent CO_2. Based on available data, all of the existing sources could meet this limit without installing additional controls.

Due to the high variability in the data pool, the 99 percent UPL for the best-performing source is less stringent than the existing source MACT floor. Therefore, pursuant to CAA section 112(d)(2) and 112(d)(3), we are proposing to revise the 1999 NESHAP to include an emission limit for formaldehyde for new and existing sources of 201 µg/dscm based on the MACT floor calculation. We have not identified any appropriate beyond-the-floor control technology options specifically for formaldehyde. We recognize the potential for some co-control of formaldehyde emissions that would be achieved by using activated carbon injection to control mercury emissions, but we were unable to quantify those reductions. More information regarding how the MACT limits were calculated and the costs is provided in Ferroalloys Production MACT Floor and Cost Memos, which are available in the docket for this rulemaking. Finally, because of the potential uncertainty in basing a limit partially on non-detect values, we considered the possibility of proposing work practice standards. We request comment on whether there are any work practices that might be appropriate.

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

As described above, for the Ferroalloys Production source category, we conducted an inhalation risk assessment for all HAP emitted. We also conducted multipathway screening analyses for mercury and POM. Details of the risk assessment and additional analyses can be found in the residual risk documentation referenced in section III.B of this preamble, which is available in the docket for this action. The Agency considered the available health information—the MIR; the numbers of persons in various risk ranges; cancer incidence; the maximum non-cancer HI; the maximum worst-case acute non-cancer HQ; the extent of non-cancer risks; the potential for adverse environmental effects; and distribution of risks in the exposed population (54 FR 38044, September 14, 1989) in developing the proposed CAA section 112(f)(2) standards for the Ferroalloys Production source category.

1. Inhalation Risk Assessment Results

Table 5 of this preamble provides an overall summary of the results of the inhalation risk assessment.

TABLE 5—FERROALLOYS PRODUCTION INHALATION RISK ASSESSMENT RESULTS

Maximum individual cancer risk (in 1 million) [1]		Estimated population at increased risk of cancer ≥ 1-in-1 million	Estimated annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI [3]		Maximum screening acute non-cancer HQ [4]
Based on actual emissions level [2]	Based on allowable emissions level			Based on actual emissions level	Based on allowable emissions level	
80	100	26,000	0.002	90	200	10

[1] Estimated maximum individual excess lifetime cancer risk due to HAP emissions from the source category.

[2] Based on the consistent views of major scientific bodies (*i.e.*, NTP in their 12th Report on Carcinogens, IARC, and other international agencies) that consider all nickel compounds to be carcinogenic, we currently consider all nickel compounds to have the potential of being as carcinogenic as nickel subsulfide. To implement this approach we apply the nickel subsulfide IRIS URE without a factor to reflect the assumption that 100 percent of the total mass of nickel may be carcinogenic. The EPA also considers it reasonable to use a value that is 50 percent of the IRIS URE for nickel subsulfide for providing an estimate of the lower end of a plausible range of cancer potency values for different mixtures of nickel compounds. If the lower end of the nickel URE range is used, the maximum individual lifetime cancer risk based on actual emissions would be 50 in 1 million. The allowable cancer risk would remain 100 in a million because at one facility nickel is not the primary cancer driver. The estimated annual cancer incidence would also be reduced, but due to our presentation of incidence to one significant figure, remains 0.002. Estimated population values are not scalable with the nickel URE range, but would be lower using the lower value.

[3] Maximum TOSHI. The target organ with the highest TOSHI for the Ferroalloys Production source category is the central nervous system.

[4] The maximum off-site HQ acute value of 10 is driven by emissions of nickel. See section III.B of this preamble for explanation of acute dose-response values.

The results of the chronic baseline inhalation cancer risk assessment indicate that, based on estimates of current actual emissions, the current maximum individual lifetime cancer risk posed by these two facilities could be up to 80 in one million (50 in one million with the lower nickel URE value), with process fugitive emissions (from the furnace, crushing operation, and casting) of nickel, chromium and arsenic as major contributors to the risk. The total estimated cancer incidence from this source category based on actual emission levels is 0.002 excess cancer cases per year or one case in every 500 years, with emissions of nickel, chromium and arsenic contributing 36 percent, 24 percent and 24 percent respectively, to this cancer incidence. In addition, we note that approximately 1,100 people are estimated to have cancer risks greater than 10 in one million, and approximately 26,000 people are estimated to have risks greater than one in one million as a result of emissions from these two facilities. When considering the risks associated with MACT-allowable emissions, both facilities have allowable risks of 100 in one million, driven by nickel, chromium VI, and arsenic at one facility (which would have an allowable cancer risk of 70 in one million when using the lower nickel URE value) and chromium VI and arsenic at the other facility (which would have an allowable cancer risk of 100 in one million when using the lower nickel URE value).

The maximum modeled chronic non-cancer TOSHI value for the source category based on actual emissions could be up to 90 with emissions of manganese from process fugitives contributing greater than 90 percent of those impacts. A TOSHI of 90 means that the modeled long-term average air concentration of manganese at that location is about 4.5 µg/m^3, or 90 times above the RfC (*i.e.*, 0.05 µg/m^3). Approximately 28,000 people are exposed to TOSHI levels above 1 and approximately 30 people are exposed to a TOSHI greater than 10. When considering MACT-allowable emissions, which did not adjust the fugitive emissions, the maximum chronic non-cancer TOSHI value could be up to 200.

Our screening analysis for worst-case acute impacts indicates the potential for two pollutants, nickel and arsenic, to exceed an HQ value of 1, with a potential maximum HQ up to 10 for nickel and 9 for arsenic based on acute REL values for each substance. There are no AEGL, ERPG, or short-term occupational values for these pollutants to use as comparison to acute REL values, as has been done in other RTR actions. In addition, there are no reference values available to assess any potential risks from acute exposure to manganese. These acute result values were based on hourly emissions estimates and a review of the facility boundaries to make sure the estimated impacts were off facility property. Refer to Appendix 1 of the Risk Assessment document in the docket for a detailed description of how the hourly emissions were developed for this source category. These results suggest there may be potential for acute impacts of concern from the emissions of nickel and arsenic from the two facilities in this category. In characterizing the potential for acute noncancer impacts of concern, it is important to remember the upward bias of these exposure estimates (*e.g.*, worst-case meteorology coinciding with a person located at the point of maximum concentration during the hour) and to consider the results along with the uncertainties related to the emissions estimates and the screening methodology.

2. Multipathway Risk Screening and Results

The PB–HAP emitted by facilities in this category include mercury, POM (as benzo(a)pyrene toxicity equivalents, or TEQ), and lead. To identify potential multipathway health risks from PB–HAP other than lead, we first performed a screening analysis that compared emissions of other PB–HAP emitted from the Ferroalloys Production source category to emission threshold values. The two facilities in the source category reported emissions of mercury and POM, and both of them had baseline emission rates greater than the screening emission threshold values for the pollutants indicating that there may be potential multipathway impacts of concern due to emissions of these pollutants from these two facilities.

Since the two PB–HAP did not screen out during our initial screening analysis, we refined our analysis somewhat with some additional site-specific information to develop an ‘‘intermediate screen,’’ which is a more realistic analysis but still considered a screening analysis. (See Appendix 5 of the Risk Assessment document in the docket for more information about this intermediate screen.) The additional site-specific information included land use around the facilities, the location of fishable lakes, and local wind direction and speed. The result of this analysis was the development of site-specific emission screening thresholds for POM and mercury. Based on this intermediate screening analysis, neither facility screened out, meaning that we cannot rule out the potential for multipathway impacts of concern due to emissions of these pollutants from these two facilities. We were unable to obtain the data necessary to conduct a fully refined assessment of multipathway risks from these two facilities.

In evaluating the potential for multipathway effects from emissions of lead, modeled maximum annual lead concentrations were compared to the National Ambient Air Quality Standards (NAAQS) for lead (0.15 μg/m^3). Results of this analysis estimate that the NAAQS for lead could be exceeded at one of the two facilities, largely due to process fugitive emissions. This analysis estimates that the annual lead concentrations could be as high as two times the NAAQS for lead, and if the maximum 3-month rolling average concentrations were used, the result could be even greater concentrations above the NAAQS. However, this additional analysis was not conducted because, as shown below (in section IV.C.2), the maximum annual lead concentration after the proposed controls are applied is significantly below the NAAQS, with a value of 0.02 μg/m^3.

3. Facilitywide Risk Assessment Results

For both facilities in this source category, there are no other significant HAP emissions sources present beyond those included in the source category. All significant HAP sources have been included in the source category risk analysis. Therefore, we conclude that the facilitywide risk is essentially the same as the source category risk and that no separate facilitywide analysis is necessary.

C. What are our proposed decisions based on risk acceptability and ample margin of safety?

1. Risk Acceptability

As noted in section III.C of this preamble, we weigh all health risk factors in our risk acceptability determination, including the MIR; the number of persons in various cancer and noncancer risk ranges; cancer incidence; the maximum noncancer HI; the maximum acute noncancer HQ; the extent of noncancer risks; the potential for adverse environmental effects; distribution of cancer and noncancer risks in the exposed population; and risk estimation uncertainty (54 FR 38044, September 14, 1989).

Based on the baseline inhalation risk assessment, we estimate that the cancer risks to the individual most exposed could be up to 80 in one million (50 in one million when using the lower nickel URE value) due to actual emissions of arsenic, chromium and nickel from process fugitives and up to 100 in one million due to MACT-allowable emissions, mainly due to chromium, arsenic and nickel stack emissions. (There is no change in the allowable cancer risk estimate when using the lower nickel URE value.) We estimate that the incidence of cancer based on actual emissions is 0.002 excess cancer cases per year, or 1 case every 500 years, and that about 26,000 people face a cancer risk greater than one in one million due to HAP emissions from this source category. The chronic noncancer TOSHI could be up to 90 due to actual emissions of manganese from process fugitives and up to 200 due to MACT-allowable emissions of manganese from process fugitives. We estimate that about 28,000 people face a TOSHI level greater than 1 and approximately 30 people face a TOSHI greater than 10 due to emissions from this source category.

With respect to potential acute non-cancer health risks, we estimate that, based on our refined analysis, the worst-case HQ value could exceed an HQ value of 1 for two pollutants, nickel and arsenic, with a potential maximum HQ up to 10 for nickel and 9 for arsenic. This indicates a potential acute concern relative to the baseline emissions of these two pollutants based on the REL. In characterizing the potential for acute noncancer impacts of concern, it is important to remember the upward bias of these exposure estimates and to consider the results along with the uncertainties related to the emissions estimates and screening methodology. In the case of ferroalloys, the acute emissions estimates were based on actual data from the ICR (*i.e.*, there was not an acute emissions adjustment factor). Our assessment also indicates the potential for multipathway impacts of concern based on the intermediate screening assessment due to baseline emissions of mercury and POM. Data were unavailable to conduct a fully refined assessment of multipathway risks from these two facilities.

The risk assessment for this source category was based on facility-specific stack-test data and emissions estimates, giving us a generally high degree of confidence in the results. We applied the two-step analysis set out in the Benzene NESHAP to assess emissions from this source category. Considering all of the above information, we are proposing that the risks are unacceptable, both for the actual emissions scenario and for the MACT-allowable emissions scenario.

The proposed determination that risks are unacceptable for this source category is primarily based on the fact that the maximum chronic noncancer HI values (90 based on actual emissions, 200 based on allowable, both dominated by manganese emissions) are higher than 1 (an HI exposure level of 1 is generally considered to be without appreciable risk of adverse health effects). The fact that 28,000 people are estimated to have exposures greater than an HI of 1 (based on actual emissions) also weighs in this proposed determination. The fact that maximum individual cancer risks are above 1 in a million also contributes to our determination of unacceptability, but to a lesser extent. While the estimated maximum individual cancer risks would, by themselves, not generally lead us to a determination that risks are unacceptable, the fact that they occur along with the chronic noncancer TOSHI greater than 1 (approximately 28,000 people are exposed to TOSHI levels above 1 and approximately 30 people are exposed to a TOSHI greater than 10) adds to our concern about these exposures, and further supports our proposed determination that risks are unacceptable. The total estimated cancer incidence (0.002 cases per year) is not very high, and this fact did not weigh significantly in our proposed determination of unacceptable risk. However, in the past EPA has weighed an estimated cancer incidence of 0.002 cases per year heavily in a determination of acceptable risk. EPA notes that there were no non-cancer concerns in these previous instances. We further note that, while our screening for potential acute and multi-pathway impacts of concern from the 2 sources in the category did identify some potential concerns for a few HAPs, these screening results did not weigh heavily in our proposed determination that risks are unacceptable.

Given that chronic noncancer risks associated with manganese emissions are the primary determinant of unacceptable risks, we provide here a brief discussion of the EPA's RfC associated with the inhalation of manganese and our confidence in the principal studies supporting the development of that RfC for context. The RfC is the level below which there is not likely to be appreciable risk of deleterious effects; however, the EPA cannot state at what exposure level there will be an appreciable risk of deleterious effects. In the case of manganese, the effect of concern was a decrease in visual reaction time in adults who were occupationally exposed to manganese. The effects were seen at a dose adjusted value of 0.05 mg/m^3 and then to derive the RfC, the EPA divided this value by 1000 to account for uncertainties related to sensitive individuals (10×), use of the lowest exposure level at which effects were observed in lieu of a level without effects (10×) and due to database limitations (10×). We note that the concentration reflected in the maximum TOSHI of 90 (0.0045 mg/m^3) is approximately a factor of 10 lower than the 0.05 mg/m^3 dose adjusted effect level in an adult male work force and used in the derivation of the RfC (0.00005 mg/m^3). The EPA has ''medium confidence'' (as used and described in the IRIS database) in the RfC value of 0.00005 mg/m^3. The confidence level reflects the overall level of uncertainty in the principle studies, which were based on human occupational studies, and the database.

Overall confidence in the principal studies (Roels *et al.*, 1987, 1992) is ''medium''. Neither of the principal studies identified a no observed adverse effect level (NOAEL) for neurobehavioral effects, nor did either study directly measure particle size or provide information on the particle size distribution. The 1992 study by Roels *et al.* did provide respirable and total dust measurements, but the 1987 study measured only total dust.[35] These limitations of the studies are mitigated by the fact that the principal studies found similar indications of neurobehavioral dysfunction, which was consistent with the results of other human studies. In addition, the 1992 Roels *et al.* study provides sufficient information to establish individual integrated exposures; the 1987 Roels *et al.* study did not.

Confidence in the database on manganese health effects is ''medium''. The duration of exposure was relatively limited and the workers were relatively young in all of the principal and supporting studies. These temporal limitations raise concerns that longer durations of exposure and/or interactions with aging might result in the detection of effects at lower concentrations, as suggested by results from other studies. In addition, the studies, with the exception of the 1992 Roels *et al.* study in which manganese exposure was limited to manganese oxide, did not specify the species of manganese to which workers were exposed. It is not clear whether certain compounds or oxidation states of manganese are more toxic than others. Although the primary neurotoxicological effects of exposure to airborne manganese have been qualitatively well characterized by the general consistency of effects across studies, the exposure-effect relationship remains to be well quantified, and a no-effect level for neurotoxicity has not been identified in any of these studies thus far. Finally, the effects of manganese on development and reproduction have not been studied adequately. See the full IRIS summary for manganese for more information (IRIS, Manganese, available at: *www.epa.gov/iris/subst/0373.htm*).

As noted in the 1989 Benzene NESHAP, the Agency weighs multiple risk factors in making a determination of acceptable or unacceptable risk, and notes that acceptability cannot be reduced to any single factor. In applying the balancing factors to this action, EPA considered a wide range of data including the MIR; the number of persons in various cancer and noncancer risk ranges; cancer incidence; the maximum noncancer HI; the maximum acute noncancer HQ; the extent of noncancer risks; the potential for adverse environmental effects; distribution of cancer and noncancer risks in the exposed population; and risk estimation uncertainty (54 FR 38044, September 14, 1989).

In summary, the MIR was 80 in a million based on actual emissions and 100 in one million based on allowable emissions; the total estimated cancer incidence was 0.002 cases per year (or 1 case in every 500 years); and approximately 30 people could be exposed at a TOSHI greater than 10 while approximately 28,000 could be exposed at a TOSHI greater than 1. Since the RfC is 1000 fold below the lowest level at which neurological effects were seen, the maximum TOSHI of 90 (or 200 for allowable risks) is still below the effect level used to derive the RfC and there is uncertainty as to exactly what level of exposure above the RfC will lead to appreciable risk of adverse effects. The population from which the effect level was derived was an adult male worker population, and that this population does not necessarily represent the general population. We note that the concentration reflected in the maximum TOSHI of 90 (0.0045 mg/m^3) is approximately a factor of 10 lower than the 0.05 mg/m^3 dose adjusted effect level in an adult male work force which was used in the derivation of the RfC.

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[35] ''Total and respirable dust concentrations were highly correlated, with the Mn content of the respirable fraction representing on average 25% of the manganese content in the total dust. The RfC is based on the respirable fraction.

Based on our assessment of the information, we are proposing that the risks are unacceptable. We solicit comment on all aspects of this proposed determination. Specifically, we solicit any information (and supporting data) that would further inform our proposed decision.

We also solicit comment on whether an alternative balancing of all the same factors including the weights afforded to individual factors discussed above and their associated uncertainties could lead to a different decision regarding risks. EPA also solicits any information (and supporting data) that would further inform this alternative approach.

Under the two-step Benzene NESHAP approach, we are required under CAA section 112(f)(2)(A) to make a determination as to what controls are needed to achieve an ample margin of safety for the source category after we make a determination on risk acceptability. The discussion of the controls needed to achieve an ample margin of safety in section IV.C.3 addresses both what would be needed if we find risks are unacceptable as well as what would be needed if we find that risks are acceptable.

2. Proposed Controls To Address Risks

We conducted an assessment to estimate the risks from the two facilities in the source category based on a post-control scenario reflecting the proposed requirements described above to address unregulated HAP (section IV.A) and the proposed controls described below. Details are provided in the Draft Risk Assessment report which is available in the docket for this action.

a. Allowable Stack Emissions

In order to ensure that the risks associated with this source category are acceptable, we evaluated the potential to reduce MACT-allowable stack emissions, which had driven the cancer MIR based on allowable emissions to 100 in a million, primarily due to allowable stack emissions of arsenic, nickel and chromium, and contributed significantly to the chronic noncancer TOSHI (based on allowable emissions) of 200, primarily due to allowable stack emissions of manganese. Our analysis determined that we could lower the existing particulate matter emission limits by approximately 50 percent for furnace stack emissions, by 80 percent for crushing and screening stack emissions and by 98 percent for the metal oxygen refining process. After the implementation of these tighter PM stack limits, the estimated cancer MIR for the source category based on allowable emissions would become 80 in one million and the TOSHI would be about 90.

For the reasons described above, under the authority of CAA section 112(f)(2), we propose to set particulate matter emission limits for the stacks at the following levels: 9.3 mg/dscm corrected to 2 percent CO_2 for new or reconstructed electric arc furnaces, 24 mg/dscm corrected to 2 percent CO_2 for existing electric arc furnaces, 1.5 mg/dscm corrected to 2 percent CO_2 for any new, reconstructed or existing MOR process, and 13 mg/dscm for any new, reconstructed or existing crushing and screening equipment. We believe sources can achieve these limits with existing controls. These new emissions limits will reduce potential risks due to allowable emissions from the stacks and prevent backsliding. We propose that compliance for existing sources will be demonstrated by annual stack testing and installation and operation of bag leak detection systems for both new and existing sources.

b. Process Fugitive Emissions Sources

Process fugitive sources are partially controlled by the existing MACT via a shop building opacity standard; however, that standard was only intended to address tapping process fugitives generated under ''normal'' tapping process operating conditions. Casting and crushing and screening process fugitives in the furnace building were not included. Under the authority of section 112(d)(2) of the Act, which allows the use of measures to enclose systems or processes to eliminate emissions and measures to collect, capture or treat such pollutants when released from a process, stack, storage, or fugitive emissions point, we evaluated several options to achieve improved emissions capture. We developed several control scenarios to assess options to improve/add local ventilation and associated control (*e.g.,* improve tapping capture, install capture and control on casting operations), but we concluded that these were all ineffective in significantly reducing emissions and risks. As part of the technology review process, we identified a furnace building ventilation system at a non-manganese producer of ferroalloys. We evaluated an option based on this furnace building ventilation system, which involves enclosing the furnace building(s) and evacuating the emissions to a control device(s). Based on our assessment we conclude that this option would reduce process fugitive emissions by about 98 percent and reduce the maximum noncancer TOSHI to about 2. A TOSHI of 2 means that the modeled long-term concentration of manganese at that location would be about 0.1 µg/m^3 (*i.e.,* about 2 times higher than the RfC). These controls would also significantly reduce the emissions of arsenic, chromium and nickel and therefore significantly reduce the cancer risks. These reductions would result in acceptable risk levels. Therefore, under the authority of CAA section 112(f), we are proposing such an approach, whereby the furnace buildings must be enclosed and process fugitive emissions would need to be collected under negative pressure at the ridge vents of the shop building and ducted to a control device.

We are proposing that the PM emissions limit (as a surrogate for particulate metal HAP) at the control device would be the same as it is for the furnace stacks (24 mg/dscm). This would allow sources the option to duct some or all process fugitive emissions to an existing furnace control device if it has excess capacity. If the existing control device at the facility does not have sufficient excess capacity to handle the captured emissions, the facility would have to install additional controls capable of complying with the proposed emission limit.

The source would also have to monitor building opacity, prepare and operate according to a process fugitives ventilation plan and conduct annual performance testing of the building ventilation control device to demonstrate compliance with the proposed standards. Baghouses would be required to be equipped with BLDS. We also propose that facilities would need to continue the practices to minimize outdoor fugitive dust emissions that are required by the 1999 MACT rule which includes implementing measures specified in their outdoor fugitive dust control plans as approved by the Administrator.

However, recognizing that there may be other control measures that could achieve equivalent emissions reductions that we have not yet identified, and to provide some flexibility for facilities to determine the best approach to reduce their emissions, we are also proposing an equivalent alternative compliance approach. Under this alternative approach, we propose that facilities would still need to continue the work practices to minimize outdoor fugitive dust emissions that are required by the 1999 MACT rule which includes implementing measures specified in their outdoor fugitive dust control plans as approved by the Administrator. However, in lieu of building the full enclosure and capture and evacuation system described above to control process fugitive emissions, we are proposing that facilities can design and implement an equivalent alternative approach (*e.g.,* local capture, controls, and work practices) to address the risks associated with those process fugitive emissions. Compliance would be demonstrated by ensuring facilities apply the equivalent alternative approach to control process fugitive emissions, continue the work practices to minimize outdoor fugitive dust emissions, and also conduct fenceline monitoring to demonstrate that the ambient concentration of manganese at their facility boundary is no more than 0.1 μg/m^3 on a 60-day rolling average, as described below.

Specifically, we propose to require that sources seeking to use this alternative prepare and submit for the Administrator's approval a written plan describing and explaining the equivalent alternative approach that they propose to apply and a proposed compliance monitoring network that must consist of at least two monitors located at or near the facility boundary, and in locations expected to have the highest concentrations of manganese, and the procedures for sampling, sample handling and custody, sample analysis, quality assurance, and recordkeeping procedures. The purpose of the ambient air monitoring network would be to ensure that manganese concentrations in air near the facility boundaries remain at or below 0.1 μg/m^3 based on 10-sample rolling averages, with samples being collected every 6 days (*i.e.,* 60-day rolling averages). The monitoring plan must include a minimum of two monitoring sites that are placed in locations that are most likely to capture measurements of the maximum concentrations at or near the facility boundaries. For example, at least one monitor must be placed in the predominant downwind direction from main emissions sources based on historical weather patterns in the area. This standard for manganese emissions would be a surrogate for all particulate HAP metals (including arsenic, nickel and chromium) since they are emitted by the same processes and controlled with the same devices and measures. We propose to set this alternative limit using manganese as a surrogate for metal HAP because manganese is the primary HAP metal emitted from this source category. We considered the feasibility of using PM as a surrogate, but developing a reliable relationship between fenceline manganese concentration and filterable PM concentration is almost impossible. We request comment on the use of manganese as a surrogate for HAP metals in the alternative approach.

This alternative regulatory requirement would provide flexibility to facilities in determining the within-facility emission sources that should be captured and vented to a control device that are most effective for reducing process fugitive emissions at their facilities. However, any facility considering this alternative approach would need to demonstrate that they can be expected to achieve the fenceline limitation with the proposed alternative approach and obtain approval from the Administrator. This is especially important for facilities with a history of elevated ambient manganese concentrations based on monitoring by state regulatory agencies or the EPA, or any facility that has been confirmed as the main contributor to elevated monitored manganese concentrations in a particular area. Nevertheless, we are seeking comments on this proposed alternative requirement, including the controls and practices that can achieve the equivalent level of reductions, the averaging time for monitoring, and whether two monitors would be sufficient or if more monitors may be warranted.

We propose to set the fenceline concentration level at 0.1 μg/m^3 to reflect the equivalent level of emissions control that we estimate will be achieved with the requirement to enclose the furnace building(s) and evacuate the emissions to a control device(s). As described in section IV.D.2, the maximum modeled chronic noncancer inhalation TOSHI value is 2 after full enclosure and evacuation of emissions based on the post-control modeling analysis. This means that the modeled concentration at the maximum impact location after these controls are in place would be 0.1 μg/m^3, which is 2 times higher than the value of the RfC for manganese. Therefore, achieving and maintaining an air manganese level of 0.1 μg/m^3 at the facility boundary is proposed as the equivalent alternative standard to minimize emissions of HAP metals. Nevertheless, we request comment on other concentration values that might be appropriate to serve as the concentration level for fenceline monitoring under this alternative. We also request comment on whether a different averaging period should be required.

As part of this alternative, we are also proposing a provision that would allow for reduced monitoring if the facility demonstrates ambient manganese concentrations less than 50 percent of the ambient manganese concentration limit for 3 consecutive years at each monitor. We propose that a revised monitoring plan may be submitted (for review and possible approval by the Administrator) to reduce the sampling and analysis frequency if all of the 10-sample rolling average concentrations at each monitor are less than 50 percent of the limit of 0.1 μg/m^3 over a 3-year period.

All of these proposed controls are described further under the technology review (in section IV.D.2.) of this preamble.

c. Results of the Post-Control Risk Assessment

The results of the post-control chronic inhalation cancer risk assessment indicate that, based on actual emissions, the maximum individual lifetime cancer risk posed by these two facilities, after the implementation of the proposed controls, could be up to 5 in one million, reduced from 80 in one million (*i.e.,* pre-controls), with an estimated reduction in cancer incidence to 0.0004 excess cancer cases per year, reduced from 0.002 excess cancer cases per year. In addition, the number of people estimated to have a cancer risk greater than or equal to one in one million would be reduced from 26,000 to 1,300.

The results of the post-control assessment also indicate that, based on actual emissions, the maximum chronic noncancer inhalation TOSHI value would be reduced to 2, from the baseline estimate of 90. The number of people estimated to have a TOSHI greater than 1 would be reduced from 28,000 to less than 10.

We also estimate that after the implementation of controls, the maximum worst-case acute refined HQ value would be reduced from a potential high of 10 to 0.3 (based on the REL value for nickel compounds) eliminating any potential for acute impacts of concern.

Considering post-control emissions of multipathway HAP, mercury emissions would be reduced approximately 88 percent, while POM emissions would be reduced approximately 66 percent from the baseline emission rates. Based on our intermediate screening approach for multipathway risks, emissions of mercury ''screen out,'' or are reduced below the screening threshold for both facilities, indicating no potential for multipathway impacts of concern due to mercury. However, emissions of POM (as benzo(a)pyrene TEQ) remain above the intermediate screening thresholds for both facilities (one by a factor of 20 and one by a factor of 2), indicating that we cannot rule out the potential for multipathway impacts of concern due to emissions of POM from these facilities.

As mentioned above, the highest lead concentration after controls, 0.02 μg/m³, is well below the NAAQS, indicating a low potential for multipathway impacts of concern due to lead.

3. Ample Margin of Safety Analysis and Proposed Controls

Under the ample margin of safety analysis, we evaluate 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 due to emissions of HAP identified in our risk assessment.

We estimate that the actions proposed under CAA section 112(f)(2), as described above to address unacceptable risks, will reduce the MIR associated with arsenic, nickel and chromium from 80 in one million (50 in one million using the lower end of the nickel URE range) to 5 in one million for actual emissions. The cancer incidence will be reduced from 0.002 to 0.0004, and the number of people estimated to have cancer risks greater than one in one million will be reduced, from 26,000 people to 1,300 people. The chronic noncancer inhalation TOSHI will be reduced from 90 to 2, and the number of people exposed to a TOSHI level greater than 1 will be reduced from 28,000 people to less than 10 people. In addition, the maximum acute HQ value will be reduced from potentially up to 10 to less than 1, and the potential multipathway impacts will be reduced.

Based on all of the above information, we conclude that the risks after implementation of the proposed controls are acceptable. Based on our research and analysis, we did not identify any cost-effective controls beyond those proposed above that would achieve further reduction in risk. Therefore we conclude that the controls to achieve acceptable risks (described above) will also achieve an ample margin of safety. Although we conclude that the implementation of the proposed requirements described above will provide public health protection with an ample margin of safety we acknowledge that there may be other control technologies that may also achieve these goals.

We are soliciting comments and information regarding additional dust and process fugitive control measures and work practices that may be more feasible to implement and effective in further reducing process and dust fugitive emissions of metal HAP, or additional monitoring that may be warranted to ensure adequate control of fugitive emissions. We also request comments on the cost effectiveness of achieving the proposed process fugitive control measures and any additional options that may be more cost effective.

We also note that we are soliciting comment on our proposed risk finding. If we conclude, after evaluating data and information received in comments on this proposed rule, that the risks posed by this source category are acceptable, then based on the data and information we currently have, we would likely adopt the same controls described in section IV.C.2 as being necessary to provide an ample margin of safety. As noted above in this section and in section IV.C.2.c., the proposed controls provide significant risk reductions beyond the current rule. Furthermore, as discussed more extensively in section IV.D.2 of this notice, below, we conclude that these controls are cost effective and technically feasible. We solicit comment on the appropriateness of these controls in the event we find, based on data and information received in comment, that the current rule provides an acceptable risk.

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

Based on our technology review, we determined that there have been advances in emissions control measures since the Ferroalloys Production NESHAP was originally promulgated in 1999. Since promulgation, facilities have steadily improved the performance of their control devices through upgrades or replacements. They have also developed improved capture techniques for some process fugitives (*e.g.,* casting and tapping emissions). Additional details regarding these analyses can be found in the following technical document for this action which is available in the docket: *Draft Technology Review for the Ferroalloys Production Source Category.*

1. Metal HAP Emissions From Stacks

We propose to continue to use particulate matter as a surrogate for metal HAP other than mercury. For a discussion regarding the appropriateness of particulate matter as a surrogate for non-mercury metal HAP, please see the memo ''Surrogate for Metal HAP Emissions for the Ferroalloys Source Category'' in the docket for this proposed rule. Based on the results from the ICR test program, we determined that all of the sources of stack emissions are emitting at significantly lower levels than their maximum permitted levels. For this reason, under the authority of CAA section 112(d)(6), we are proposing revised emission limits for new and existing sources. We are also proposing that any uncontrolled furnace vent stacks would be subject to the same concentration limits.

We calculated the proposed emission limits based on a UPL analysis, resulting in a proposed existing source furnace stack emissions limit of 24 mg/dscm and proposed new source furnace stack emissions limit of 9.3 mg/dscm. We also calculated a proposed stack emission limit of 13 mg/dscm for crushing and screening equipment that would apply to both new and existing sources.

The metal oxygen refining operation is a unique process, and so we only have a single ICR test data point. Therefore, we calculated a proposed emissions limit for this source using the 99 percent UPL from the test data, resulting in a proposed limit of 3.9 mg/dscm that would apply to new and existing metal oxygen refining operation sources. We request comment on whether we should instead set the MOR limit to be the same as the proposed furnace stack limit for existing sources. This change would allow a facility to use any excess capacity in the MOR control device to treat furnace emissions, if needed. Such a limit is still more stringent than the current limit included in subpart XXX for the MOR (approximately 69 mg/dscm).

Based on our analyses, we expect that no additional controls would be required for the facilities to comply with these proposed limits. To demonstrate compliance, we propose that sources would be required to conduct periodic performance testing, and develop and operate according to a baghouse operating plan or continuously monitor scrubber operating parameters. Furnace baghouses would be required to be equipped with bag leak detection systems (BLDS).

2. Metal HAP Emissions From Process Fugitives

As described above, we evaluated several options to improve and increase the capture and control of process fugitive sources. The two main options involve either local ventilation or building ventilation. Local ventilation (*e.g.,* hoods or ductwork located in close proximity to an emissions source such as tapping or casting) is common in this industry, but performance varies due to design of the capture system, maintenance practices and control device capacity. Industry representatives have expressed concern that extensive retrofitting of local ventilation is complicated at existing facilities because of the need for material movement using large overhead cranes and ladles. We identified a furnace building ventilation system at a ferrosilicon producer, using a similar production process. This ''system'' is basically an enclosure of the furnace building with evacuation of emission to a control device.

We evaluated an option to enclose the furnace building(s) and evacuate the emissions to a control device(s) similar to the system used at the ferrosilicon producing facility described above. Based on that evaluation, we believe that it is feasible to install enclosures and have the fugitive emissions at the ridge vents of the shop building collected under negative pressure and ducted to a control device, and have a PM emissions limit at the control device the same as it is for the furnace stacks (*i.e.,* 24 mg/dscm). This would allow sources the option to duct some or all process fugitive emissions to an existing furnace control device if it has excess capacity. If it does not have excess capacity, the facility would have to install additional controls. Under this option, the source would also have to monitor building opacity; prepare and operate according to a process fugitives emissions ventilation plan, which would include requirements to demonstrate that the building is being operated at a negative pressure of at least 0.007 inches of water; and conduct periodic performance testing of the building ventilation control device to demonstrate compliance with the proposed standards. Baghouses would be required to be equipped with BLDS.

We estimate the total capital costs of installing the required ductwork, fans, and baghouses under this option to be $9.4 million and the total annualized costs to be $2.3 million for the two plants. We estimate that particulate metal HAP emissions would be reduced by 81 tons, resulting in a cost per ton of HAP removed at $28,000 per ton ($14 per pound). We also estimate that this option would achieve PM emission reductions of 630 tons, resulting in a cost per ton of PM removed at $3,600 per ton and achieve $PM_{2.5}$ emission reductions of 257 tons, resulting in a cost per ton of $PM_{2.5}$ removed of $8800 per ton. In light of the technical feasibility and cost effectiveness of this approach, we are proposing this option under the authority of section 112(d)(6). These proposed requirements are exactly the same as those proposed under Section 112(f) which are described in section IV.C.2 of this preamble.

As described above in section IV.C.2.b, we are also proposing an equivalent alternative compliance approach. Facilities can design and implement an equivalent alternative approach (*e.g.,* local capture, controls, and work practices) to achieve equivalent reductions of their process fugitive emissions. Compliance would be demonstrated by ensuring facilities apply the equivalent alternative approach to control process fugitive emissions, continue the work practices to minimize outdoor fugitive dust emissions, and also conduct fenceline monitoring to demonstrate that the ambient concentration of manganese at their facility boundary is no more than 0.1 μg/m³ on a 60-day rolling average.

3. Hydrochloric Acid, Formaldehyde, Mercury and PAH Emissions From Furnace Stacks

The controls for HCl, formaldehyde, mercury and PAHs were described in Section IV.A., and no additional controls have been identified.

4. Outdoor Fugitive Dust Emissions

The existing rule has a requirement for an outdoor fugitive dust control plan. We are unable to quantify HAP emissions from outdoor fugitive dust sources and did not identify any additional procedures or controls that could be expected to have a significant impact on these emissions. Therefore, we are not proposing to change the existing requirements.

E. What other actions are we proposing?

1. Startup, Shutdown, Malfunction

The United States Court of Appeals for the District of Columbia Circuit vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM. *Sierra Club* v. *EPA,* 551 F.3d 1019 (DC Cir. 2008), *cert. denied,* 130 S. Ct. 1735 (U.S. 2010). Specifically, the Court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), that are part of a regulation, commonly referred to as the ''General Provisions Rule,'' that the EPA promulgated under CAA section 112. When incorporated into CAA section 112(d) regulations for specific source categories, these two provisions exempt sources from the requirement to comply with the otherwise applicable CAA section 112(d) emissions standard during periods of SSM.

We are proposing the elimination of the SSM exemption in this rule. Consistent with *Sierra Club* v. *EPA,* the EPA is proposing standards in this rule that apply at all times. We are also proposing several revisions to Table 1 to subpart XXX of part 63 (the General Provisions Applicability table). For example, we are proposing to eliminate the incorporation of the General Provisions' requirement that the source develop an SSM plan. We also are proposing to eliminate or revise certain recordkeeping and reporting that related to the SSM exemption. The EPA has attempted to ensure that we have not included in the proposed regulatory language any provisions that are inappropriate, unnecessary, or redundant in the absence of the SSM exemption. We are specifically seeking comment on whether there are any such provisions that we have inadvertently incorporated or overlooked.

In proposing the standards in this rule, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not proposed different standards for those periods.

Information on periods of startup and shutdown received from the industry in the ICR indicate that emissions during these periods do not increase. Control devices such as baghouses for metal HAP particulate control and activated carbon controls for mercury are started up before the process units, and are operational during the shutdown phase of a process. Therefore, no increase in emissions is expected during these periods. Building ventilation systems for process fugitive emissions will be in place at all times. Therefore, separate standards for periods of startup and shutdown are not being proposed.

Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, malfunction is defined as a ''sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment or a process to operate in a normal or usual manner * * *'' (40 CFR 63.2). The EPA has determined that CAA section 112 does not require that emissions that occur during periods of malfunction be factored into development of CAA section 112 standards. Under CAA section 112, emissions standards for new sources must be no less stringent than the level ''achieved'' by the best controlled similar source, and emission standards for existing sources generally must be no less stringent than the average emissions limitation ''achieved'' by the best performing 12 percent (or 5 sources in cases where there are fewer than 30 sources in the source category) of sources in the category. There is nothing in CAA section 112 that directs the Agency to consider malfunctions in determining the level ''achieved'' by the best performing or best controlled sources when setting emissions standards. Moreover, while the EPA accounts for variability in setting emissions standards consistent with the CAA section 112 case law, nothing in that case law requires the Agency to consider malfunctions as part of that analysis. Section 112 of the CAA uses the concept of ''best controlled'' and ''best performing'' unit in defining the level of stringency that CAA section 112 performance standards must meet. Applying the concept of ''best controlled'' or ''best performing'' to a unit that is malfunctioning presents significant difficulties, as malfunctions are sudden and unexpected events.

Further, accounting for malfunctions 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 such, the performance of units that are malfunctioning is not ''reasonably'' foreseeable. *See, e.g., Sierra Club* v. *EPA,* 167 F. 3d 658, 662 (DC 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 (DC 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, the goal of a best controlled or best performing source is to operate in such a way as to avoid malfunctions of the source and accounting for malfunctions could lead to standards that are significantly less stringent than levels that are achieved by a well-performing non-malfunctioning source. The EPA's approach to malfunctions is consistent with CAA 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'' 40 CFR 63.2 (definition of malfunction).

Finally, the EPA recognizes that even equipment that is properly designed and maintained can sometimes fail and that such failure can sometimes cause an exceedance of the relevant emissions standard. (See, *e.g.,* State Implementation Plans: Policy Regarding Excessive Emissions During Malfunctions, Startup, and Shutdown (Sept. 20, 1999); Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions (Feb. 15, 1983)). The EPA is therefore proposing to add to the final rule an affirmative defense to civil penalties for exceedances of emissions limits that are caused by malfunctions. See 40 CFR 63.1622 (defining ''affirmative defense'' to mean, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding). We also are proposing other regulatory provisions to specify the elements that are necessary to establish this affirmative defense; the source must prove by a preponderance of the evidence that it has met all of the elements set forth in 40 CFR 63.1627 (40 CFR 22.24). The criteria ensure that the affirmative defense is available only where the event that causes an exceedance of the emissions limit meets the narrow definition of malfunction in 40 CFR 63.2 (sudden, infrequent, not reasonable preventable and not caused by poor maintenance and or careless operation). For example, to successfully assert the affirmative defense, the source must prove by a preponderance of the evidence that excess emissions ''[w]ere caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner * * *.'' The criteria also are designed to ensure that steps are taken to correct the malfunction, to minimize emissions in accordance with 40 CFR 63.1623(g) and to prevent future malfunctions. For example, the source must prove by a preponderance of the evidence that ''[r]epairs were made as expeditiously as possible when the applicable emissions limitations were being exceeded * * *'' and that ''[a]ll possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health * * *.'' In any judicial or administrative proceeding, the Administrator may challenge the assertion of the affirmative defense and, if the respondent has not met its burden of proving all of the requirements in the affirmative defense, appropriate penalties may be assessed in accordance with CAA section 113 (see also 40 CFR 22.27).

The EPA included an affirmative defense in the proposed rule in an attempt to balance a tension, inherent in many types of air regulation, to ensure adequate compliance while simultaneously recognizing that despite the most diligent of efforts, emission limits may be exceeded under circumstances beyond the control of the source. The EPA must establish emission standards that ''limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.'' 42 U.S.C. 7602(k) (defining ''emission limitation and emission standard''). *See generally Sierra Club* v. *EPA,* 551 F.3d 1019, 1021 (DC Cir. 2008). Thus, the EPA is required to ensure that section 112 emissions limitations are continuous. The affirmative defense for malfunction events meets this requirement by ensuring that even where there is a malfunction, the emission limitation is still enforceable through injunctive relief. While ''continuous'' limitations, on the one hand, are required, there is also caselaw indicating that in many situations it is appropriate for the EPA to account for the practical realities of technology. For example, in *Essex Chemical* v. *Ruckelshaus,* 486 F.2d 427, 433 (DC Cir. 1973), the DC Circuit acknowledged that in setting standards under CAA section 111 ''variant provisions'' such as provisions allowing for upsets during startup, shutdown and equipment malfunction ''appear necessary to preserve the reasonableness of the standards as a whole and that the record does not support the 'never to be exceeded' standard currently in force.'' See also, *Portland Cement Association* v. *Ruckelshaus,* 486 F.2d 375 (DC Cir. 1973). Though intervening caselaw such as *Sierra Club* v. *EPA* and the CAA 1977 amendments undermine the relevance of these cases today, they support the EPA's view that a system that incorporates some level of flexibility is reasonable. The affirmative defense simply provides for a defense to civil penalties for excess emissions that are proven to be beyond the control of the source. By incorporating an affirmative defense, the EPA has formalized its approach to upset events. In a Clean Water Act setting, the Ninth Circuit required this type of formalized approach when regulating ''upsets beyond the control of the permit holder.'' *Marathon Oil Co.* v. *EPA,* 564 F.2d 1253, 1272–73 (9th Cir. 1977). *But see, Weyerhaeuser Co.* v. *Costle,* 590 F.2d 1011, 1057–58 (DC Cir. 1978) (holding that an informal approach is adequate). The affirmative defense provisions give the EPA the flexibility to both ensure that its emission limitations are ''continuous'' as required by 42 U.S.C. 7602(k), and account for unplanned upsets and thus support the reasonableness of the standard as a whole.

Specifically, we are proposing the following changes to the rule.

- Added general duty requirements in 40 CFR 63.1623(g) to replace General Provision requirements that reference vacated SSM provisions.
- Added replacement language that eliminates the reference to SSM exemptions applicable to performance tests in 40 CFR 63.1625(a)(5).
- Added paragraphs in 40 CFR 63.1629(d) requiring the reporting of malfunctions as part of the affirmative defense provisions.
- Added paragraphs in 40 CFR 63.1629(b) requiring the keeping of certain records during malfunctions as part of the affirmative defense provisions.
- Developed Table 1 to subpart XXX of part 63 to reflect changes in the applicability of the General Provisions to this subpart resulting from a court vacatur of certain SSM requirements in the General Provisions.

2. Electronic Reporting

The EPA and other authorities such as state, local and tribal agencies must have performance test data to conduct effective reviews of CAA sections 112 and 129 standards, as well as for many other purposes including compliance determinations, emission factor development, and annual emission rate determinations. We believe that improvements in the process of submitting, reviewing and storing test data would result in increases in efficiency and cost savings to the regulated community; state, local and tribal agencies; the public and ourselves. These improvements are possible because stack testing firms are increasingly collecting performance test data in electronic format, making it possible to move to an electronic data submittal system that would increase the ease and efficiency of data submittal and improve data accessibility.

Through this proposal, the EPA is proposing a step to increase the ease and efficiency of data submittal and improve data accessibility. Specifically, the EPA is proposing that owners and operators of Ferroalloys Production facilities submit electronic copies of required performance test reports to the EPA's WebFIRE database. The WebFIRE database was constructed to store performance test data for use in developing emission factors. A description of the WebFIRE database is available at *http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main.*

As proposed above, data entry would be through an electronic emissions test report structure called the Electronic Reporting Tool (ERT). The ERT would be able to transmit the electronic report through the EPA's Central Data Exchange network for storage in the WebFIRE database, making submittal of data very straightforward and easy. A description of the ERT can be found at *http://www.epa.gov/ttn/chief/ert/index.html.*

The proposal to submit performance test data electronically to the EPA would apply only to those performance tests conducted using test methods that will be supported by the ERT. The ERT contains a specific electronic data entry form for most of the commonly used EPA reference methods. A listing of the pollutants and test methods supported by the ERT is available at *http://www.epa.gov/ttn/chief/ert/index.html.* We believe that industry would benefit from this proposed approach to electronic data submittal. Having these data, the EPA would be able to develop improved emission factors, make fewer information requests, and promulgate better regulations.

One major advantage of the proposed submittal of performance test data through the ERT is a standardized method to compile and store much of the documentation required to be reported by this rule. Another advantage is that the ERT clearly states what testing information would be required. Another important proposed benefit of submitting these data to the EPA at the time the source test is conducted is that it should substantially reduce the effort involved in data collection activities in the future. When the EPA has performance test data in hand, there will likely be fewer or less substantial data collection requests in conjunction with prospective required residual risk assessments or technology reviews. This would result in a reduced burden on both affected facilities (in terms of reduced manpower to respond to data collection requests) and the EPA (in terms of preparing and distributing data collection requests and assessing the results).

State, local, and tribal agencies could also benefit from more streamlined and accurate review of electronic data submitted to them. The ERT would allow for an electronic review process rather than a manual data assessment making review and evaluation of the source provided data and calculations easier and more efficient. Finally, another benefit of the proposed data submittal to WebFIRE electronically is that these data would greatly improve the overall quality of existing and new emissions factors by supplementing the pool of emissions test data for establishing emissions factors and by ensuring that the factors are more representative of current industry operational procedures. A common complaint heard from industry and regulators is that emission factors are outdated or not representative of a particular source category. With timely receipt and incorporation of data from most performance tests, the EPA would be able to ensure that emission factors, when updated, represent the most current range of operational practices. In summary, in addition to supporting regulation development, control strategy development, and other air pollution control activities, having an electronic database populated with performance test data would save industry, state, local, tribal agencies, and the EPA significant time, money, and effort while also improving the quality of emission inventories and, as a result, air quality regulations.

3. Emissions Averaging

We are proposing to add an emissions averaging option for electric arc furnace stack emissions (PM, mercury, PAH, HCl or formaldehyde). If you have more than one existing emission source (*e.g.,* electric arc furnace) located at one or more contiguous properties, which are under common control of the same person (or persons under common control), you may demonstrate compliance by emission averaging among the existing emission sources, if your averaged emissions for such emission sources are equal to or less than the applicable emission limit.

We are also proposing to allow averaging between existing process fugitive control devices for PM stack emissions as a second averaging group. However, we believe it may be appropriate to combine these process fugitive stack emissions into the furnace stack averaging group for PM emissions for two reasons. First, both types of emissions are likely to be controlled with similar, if not common control devices, *e.g.,* large fabric filters. Second, we are proposing to apply an identical PM emission limit for both of these emission sources, which would simplify averaging of PM emissions. We request comment on this option.

We are also proposing to allow averaging between existing crushing and screening equipment for PM stack emissions. We believe this is a distinct averaging group compared to the furnace and process fugitives groups. The airflow and associated control devices are typically much smaller and they are subject to a more stringent emission limit than the other PM sources. However, we request comment on the potential for more broadly defined averaging options for this group.

As part of the EPA's general policy of encouraging the use of flexible compliance approaches where they can be properly monitored and enforced, we are including emissions averaging for existing sources in this proposed rule. Emissions averaging can provide sources the flexibility to comply in the least costly manner while still maintaining regulation that is workable and enforceable. Emissions averaging would allow owners and operators of an existing affected source to demonstrate that the source complies with the proposed emission limits by averaging the emissions from an individual affected emission unit that is emitting above the proposed emission limits with other affected emission units at the same facility that are emitting below the proposed emission limits and that are within the same averaging group, as described below.

This proposed rule includes an emissions averaging compliance alternative because emissions averaging represents an equivalent, more flexible, and less costly alternative to controlling certain emission points to MACT levels. We have concluded that a limited form of averaging could be implemented that would not lessen the stringency of the MACT limits and would provide flexibility in compliance, cost and energy savings to owners and operators of existing sources. We also recognize that we must ensure that any emissions averaging option can be implemented and enforced, will be clear to sources, and most importantly, will be no less stringent than unit by unit implementation of the MACT limits.

The EPA is proposing to establish within a NESHAP a unified compliance regimen that permits averaging within an existing affected source across individual affected units subject to the standard under certain conditions. Averaging across affected units is permitted only if it can be demonstrated that the total quantity of any regulated pollutant that may be emitted by that portion of a contiguous major source that is subject to the NESHAP will not be greater under the averaging mechanism than it could be if each individual affected unit complied separately with the applicable standard. Under this test, the practical outcome of averaging is equivalent to compliance with the MACT limits by each discrete unit, and the statutory requirement that the MACT standard reflect the maximum achievable emissions reductions is, therefore, fully effectuated.

In past rulemakings, the EPA has generally imposed certain limits on the scope and nature of emissions averaging programs. These limits include: (1) No averaging between different types of pollutants; (2) no averaging between sources that are not part of the same affected source; (3) no averaging between individual sources within a single major source if the individual sources are not subject to the same NESHAP; and (4) no averaging between existing sources and new sources. This proposed rule is consistent with these limitations. First, emissions averaging would only be permitted between individual sources at a single existing affected source, and would only be permitted between individual sources subject to the proposed Ferroalloys Production NESHAP. Further, emissions averaging would not be permitted between two or more different affected sources. Finally, new affected sources could not use emissions averaging. Accordingly, we have concluded that the averaging of emissions across affected units is consistent with the CAA.

In addition, this proposed rule would require each facility that intends to utilize emission averaging to submit an emission averaging plan, which provides additional assurance that the necessary criteria will be met. In this emission averaging plan, the facility must include the identification of: (1) All units in the averaging group; (2) the control technology installed; (3) the process parameters that will be monitored; (4) the specific control technology or pollution prevention measure(s) to be used; (5) the test plan for the measurement of the HAP being averaged; and (6) the operating parameters to be monitored for each control device. Upon receipt, the regulatory authority would not be able to approve an emission averaging plan containing averaging between emissions of different types of pollutants or between different affected sources (e.g., between furnaces and crushing and screening equipment).

We seek comment on use of a discount factor when emissions averaging is used and on the appropriate value of a discount factor, if used. Such discount factors (e.g., 10 percent) have been used in previous NESHAP, particularly where there was variation in the types of units within a common source category to ensure that the environmental benefit was being achieved. In this situation, however, the affected sources are more homogeneous, making emissions averaging a more straight forward analysis. Further, with the monitoring and compliance provisions that are being proposed, there is additional assurance that the environmental benefit will be realized. The emissions averaging provisions in this proposed rule are based in part on the emissions averaging provisions in the Hazardous Organic NESHAP (HON). The legal basis and rationale for the HON emissions averaging provisions were provided in the preamble to the final HON.[36]

4. Other Changes

The following lists additional minor changes to the NESHAP we are proposing. The main focus of these changes is to ensure that the rule provides adequate monitoring, reporting, recordkeeping and testing provisions to ensure that the affected sources are able to demonstrate continuous compliance with the proposed standards. These changes reflect changes we have made to many other existing NESHAP to improve the quality of these compliance requirements. This list also includes proposed rule changes that address editorial corrections and plain language revisions:

- Reduce frequency of emission testing for the primary furnace control devices for PM and propose periodic testing for PM and other regulated pollutants. This change is possible because of requirement to conduct continuous monitoring. Also add a periodic testing requirement for the building ventilation system control devices and crushing and screening equipment control devices.
- Add requirement for new and existing baghouses that control furnace or building ventilation systems to be equipped with BLDS to demonstrate continuous compliance. Retain provisions for baghouses to have a baghouse SOP manual.
- Add requirements to implement and enforce more detailed requirements for

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[36] Hazardous Organic NESHAP (59 FR 19425; April 22, 1994).

continuous parameter monitoring systems to ensure continuous compliance.

- Reduce the shop building opacity limit to 10 percent opacity to reflect current industry performance. Eliminate 6-minute excursion level because it does not provide any significant flexibility (sources that tend to exceed the general opacity limit in any 6-minute period tend to do so for several minutes so that the excursions for one 6-minute period is meaningless). Eliminate events excluded from the opacity observation as they are infrequent, can be avoided in some cases, are emitted from operations we intend to control better, and can be confusing to enforce.
- Change the format of the PM standards to reflect an outlet concentration format (mg/dscm). This format is the direct output of the emissions test and reflects the constant output nature of the predominant control device, *i.e.,* a baghouse.
- Add PM continuous emissions monitoring system as an alternative to installing and operating a BLDS.
- Editorial changes, including revising the titles of sections in the subpart to better reflect the description of proposed requirements and to make the regulation easier for the reader to navigate.
- Update the recordkeeping and reporting sections to reflect the new monitoring requirements and monitoring options described above.
- Update the compliance dates to include the anticipated dates the proposed requirements will become effective.

F. What compliance dates are we proposing?

We are proposing that facilities must comply with the new proposed requirements in this action (which are being proposed under CAA sections 112(d)(2), 112(d)(3), 112(d)(6) and 112(f)(2) for all affected sources), no later than 2 years after the effective date of this rule. In the period between the effective date of this rule and the compliance date, existing sources would continue to comply with the existing requirements specified in §§ 63.1650 through 63.1661.

Under 40 CFR 63.6(i)(4)(ii), ''the owner or operator of an existing source unable to comply with a relevant standard established * * * pursuant to section 112(f) * * * may request that the Administrator grant an extension allowing the source up to 2 years after the standard's effective date to comply with the standard.'' The rule further specifies a written application for such a request. Here, the EPA is already fully aware of the steps needed for each source to comply with the proposed standards and to reasonably estimate the amount of time it will take each source to do so. We believe that the 2-year extension would be warranted in all cases for sources needing to upgrade current practice. This includes the time needed to: Construct required building ventilation systems and install associated control devices for process fugitive sources; determine appropriate mercury and PAH control devices, locations, amount and type of carbon needed and assess potential waste disposal issues; select and install appropriate monitoring technologies; seek bids, select a vendor, install and test the new equipment; and, purchase, install and conduct QA and quality control measures on compliance monitoring equipment (see *Estimated Time Needed to Achieve Compliance with The Proposed Revisions to the MACT standard for Ferroalloys Production Facilities,* which is available in the docket for this proposed action). The EPA believes it reasonable to interpret 40 CFR 63.6(i)(4)(ii) to allow this plenary finding, rather than utilizing a facility-by-facility application process, when the facts are already known and a category-wide adjudication is therefore possible. In addition, utilizing this process allows for public comment on the issue which would not be possible if a case-by-case application process with a 90-day window for completion were used.

V. Summary of Cost, Environmental, and Economic Impacts

A. What are the affected sources?

We anticipate that the two manganese production ferroalloys production facilities currently operating in the United States will be affected by these proposed amendments. We do not know of any new facilities that are expected to be constructed in the foreseeable future. However, there is one facility that has a permit to produce ferromanganese or silicomanganese in an electric arc furnace, but it did so for only a brief period, several years ago. It is possible that this facility could resume production or another non-manganese ferroalloy producer could decide to commence production of ferromanganese or silicomanganese. One of the existing facilities is considering building a new manganese furnace, but their timeline and actual intent to go forward is unclear. Given this uncertainty, our impact analysis is focused on the two existing sources that are currently operating.

B. What are the air quality impacts?

The EPA estimated the emissions reductions that are expected to result from the proposed amendments to the 1999 NESHAP compared to the 2010 baseline emissions estimates. A detailed documentation of the analysis can be found in: *Draft Cost Impacts of the Revised NESHAP for the Ferroalloys Production Source Category.*

Emissions of metal HAP from ferroalloys production sources have declined in recent years, primarily as the result of state actions and also due to the industry's own initiative. The current proposal would cut HAP emissions (primarily particulate metal HAP such as manganese, arsenic and nickel) by 60 percent from their current levels. Under the proposed emissions limit for process fugitives emissions from the furnace building, we estimate that the HAP emissions reductions would be 81 tpy, including significant reductions of manganese. We also anticipate mercury reductions of 420 lb/yr and PAH reductions of 2.5 tpy from installation of activated carbon injection controls at one facility. Total HAP reductions for the two facilities are estimated to be 84 tpy.

Based on the emissions data available to the EPA, we believe that both facilities will be able to comply with the proposed emissions limits for HCl and formaldehyde without additional controls. There may be some formaldehyde emission reductions at the facility that we believe will be required to install an activated carbon injection system, but we have not quantified these reductions because of the uncertainty of the effectiveness of the activated carbon system designed for mercury and PAH removal compared to formaldehyde removal. We do not anticipate any reductions in HCl.

C. What are the cost impacts?

Under the proposed amendments, ferroalloys production facilities are expected to incur capital costs for the installation of ductwork and baghouses for building ventilation and activated carbon injection systems. There would also be capital costs associated with installing new or improved continuous monitoring systems, included installation of BLDS on the furnace and building ventilation baghouses that are not currently equipped with these systems.

The capital costs for each facility were estimated based on the number and types of upgrades required. The memorandum *Draft Cost Impacts of the Revised NESHAP for the Ferroalloys Production Source Category* includes a complete description of the cost estimate methods used for this analysis and is available in the docket.

The majority of the capital costs estimated for compliance with the amendments proposed in this action are for purchasing new control devices. For the shop building ventilation system, we assumed that each facility would need to install a building ventilation system in order to comply with the proposed shop building emissions limits. For each facility, we estimated the square footage of shop building air that would need to be evacuated and the size of control device that would be required. Although the proposed amendments would provide the alternative option to install monitors at or near the property boundary to demonstrate compliance with the building ventilation requirements, we assume that sources would be unlikely to meet the alternative standard without improving the level of control in the shop building.

To estimate the cost for the building ventilation fabric filter, we contacted a vendor who had recently supplied a fabric filter to one of the facilities to obtain assistance in developing a cost estimate for the installation. The equipment-only cost supplied by the vendor was used in conjunction with techniques described in the sixth edition of the EPA Air Pollution Control Cost Manual [37] to estimate total installed capital cost and annual costs.

Our cost model included installation of the baghouse and any necessary fans, ductwork, and site work, including extra ductwork for connection to the building roof monitors. The total installed capital cost of three fabric filters (two at one facility, one at the second facility) designed for a flow-rate of 150,000 actual cubic feet per minute was estimated at $9.4 million. The annualized capital cost and operational and maintenance costs are estimated at $2.3 million, via techniques described in the sixth edition of the EPA Air Pollution Control Cost Manual. The annualized cost assumes a 20-year life expectancy for the unit and, to be consistent with OMB Guidance in Circular A–4, a 7 percent cost of capital as an estimate of the annualized capital cost.

We considered installation of both fixed carbon beds and activated carbon injections for the control of mercury and PAH emissions. After talking to carbon vendors, we learned that fixed carbon beds are not a viable option given the size of the furnace airstream we would need to control. We also considered whether to put the activated carbon injection upstream or downstream of the existing PM control device. By installing the system downstream of the PM control device, we would avoid potential concerns with the activated carbon interfering with potential sale or reuse of baghouse dust or potential increase in mercury load in the scrubber sludge impoundment. This approach requires installation of a separate ''polishing'' baghouse to capture the injected carbon for disposal.

Unlike activated carbon systems used primarily for control of volatile organic compounds, we have been told that mercury impregnated compounds cannot be recycled. There is concern that such downstream control could result in sufficient concentration of mercury in the baghouse dust that the facility would be required to treat such dust as a hazardous waste under the RCRA. However, based on conversations with vendors and other mercury control experts, we believe that the resulting waste will most likely be nonhazardous. We are seeking comments on the cost methodology and assumptions used to develop these cost estimates.

Costs for Activated Carbon Injection (ACI) were estimated using cost equations developed for the Utility NESHAP.[38] The calculated equipment costs for ACI and fabric filters were used in conjunction with techniques described in the sixth edition of the EPA Air Pollution Control Cost Manual to estimate total installed capital cost and annual costs. Our cost model included installation of the two ACI systems, one polishing fabric filter, and associated fans, ductwork, and site work. We estimate the total capital costs are $1.7 million and the annual costs are $1.4 million.

The estimated costs for the proposed change to the monitoring requirements for baghouses, including installation of seven new BLDS for four existing furnace baghouses and three building ventilation baghouses is $270,000 of capital cost. The capital cost for a differential pressure monitor to ensure that shop buildings are under negative pressure is $9,200. The capital cost estimated for a continuous parameter monitoring system for the wet scrubber at one facility is estimated to be $50,000. Finally, the estimated capital cost for carbon injection monitoring is $20,000. The capital costs for all additional monitoring and recordkeeping requirements, including the baghouse monitoring proposed, is estimated at $340,200.

Annualized costs are estimated to be $94,000 for the BLDS, $18,000 for the scrubber parameter monitoring system, and $6,200 for the carbon injection monitoring system. There is also an estimated annualized cost to monitor the manganese ore content for mercury emissions of $1,200. The estimated annual cost for reporting and recordkeeping is $37,000. We estimate the costs of the periodic performance testing requirements to be $800,000. The resulting total annualized costs are $347,000.

The total annualized costs for the proposed rule are estimated at $4.0 million (2010 dollars). Table 6 provides a summary of the estimated costs and emissions reductions associated with the proposed amendments to the Ferroalloys Production NESHAP presented in today's action.

TABLE 6—ESTIMATED COSTS AND REDUCTIONS FOR THE PROPOSED STANDARDS IN THIS ACTION

Proposed amendment	Estimated capital cost ($MM) [1]	Estimated annual cost ($MM)	Total HAP emissions reductions (tpy)	Cost effectiveness in $ per ton total HAP reduction (and in $ per pound)
Capture and Control Process Fugitives	9.4	2.3	81 (of metal HAP)	$0.03 MM per ton. ($14 per pound).
MACT Limits for Mercury	1.7	1.4	0.2 (of mercury)	$6.7 MM per ton. ($3,300 per pound).
MACT Limits for co-control of PAH	NA	N/A	2.5 (of PAH)	N/A.
HCl and formaldehyde concentration limits	0	0	0	N/A.
Compliance testing over 3-year period	N/A	0.26	N/A	N/A.
Annual average monitoring over 3-year period	0.11	0.08	N/A	N/A.

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[37] *http://epa.gov/ttn/catc/products.html#cccinfo.*

[38] Sargent & Lundy, IPM Model—Revisions to Cost and Performance for APC Technologies, Mercury Control Cost Development Methodology Final, March, 2011. *http://www.epa.gov/airmarkt/progsregs/epa-ipm/docs/append5_3.pdf.*

D. What are the economic impacts?

We estimate that there will be no more than a 0.2 percent price change and a similar reduction in output associated with the proposal. The impacts to affected firms will be low because the annual compliance costs are quite small when compared to the annual revenues for the two affected parent firms (much less than 1 percent for each). The impacts to affected consumers should also be quite small. Thus, there will not be any significant impacts on affected firms and their consumers as a result of this proposal.

E. What are the benefits?

We estimate the monetized benefits of this regulatory action to be $71 million to $170 million (2010$), at a 3 percent discount rate in the implementation year (2015). The monetized benefits of the regulatory action at a 7 percent discount rate are $63 million to $160 million (2010$) in the same implementation year. Using alternate relationships between PM$_{2.5}$ and premature mortality supplied by experts, higher and lower benefits estimates are plausible, but most of the expert-based estimates fall between these two estimates.[39] A summary of the monetized benefits estimates at discount rates of 3 percent and 7 percent is in Table 7 of this preamble.

TABLE 7—SUMMARY OF THE MONETIZED BENEFITS ESTIMATES FOR THE FERROALLOYS INDUSTRY IN 2015

[Millions of 2010$]

Pollutant	Estimated emission reductions (tpy)	Total monetized benefits (3% discount rate)	Total monetized benefits (7% discount rate)
PM$_{2.5}$	257	$71 to $170	$63 to $160.

[1] All estimates are for the implementation year (“2015”, assuming the final rule is published in January 2012) and are rounded to two significant figures so numbers may not sum across rows. All fine particles are assumed to have equivalent health effects. Benefits from reducing HAPs emissions are not included.

These benefits estimates represent the total monetized human health benefits for populations exposed to less PM$_{2.5}$ in 2015 from controls installed to reduce air pollutants in order to meet these proposed standards. These estimates are calculated as the sum of the monetized value of avoided premature mortality from reducing PM$_{2.5}$. To estimate human health benefits derived from reducing PM$_{2.5}$, we used the general approach and methodology laid out in Fann, Fulcher, and Hubbell (2009).[40] However, in this proposal we utilized source apportionment air quality modeling for the ferroalloys industry.[41] Therefore all benefits per ton estimates are specific to the ferroalloys sector.

To generate the BPT estimates, we used a model to convert emissions of direct PM$_{2.5}$ into changes in ambient PM$_{2.5}$ levels and another model to estimate the changes in human health associated with that change in air quality. Finally, the monetized health benefits were divided by the emission reductions to create the BPT estimates. These models assume that all fine particles, regardless of their chemical composition, are equally potent in causing premature mortality because there is no clear scientific evidence that would support the development of differential effects estimates by particle type. In this rule only directly emitted PM$_{2.5}$ is considered. Direct PM$_{2.5}$ emissions convert directly into ambient PM$_{2.5}$; thus, to the extent that emissions occur in population areas, exposures to direct PM$_{2.5}$ will tend to be higher than exposure to any other precursor, and monetized health benefits will be higher as well.

For context, it is important to note that the magnitude of the PM benefits is largely driven by the concentration response function for premature mortality. Experts have advised the EPA to consider a variety of assumptions, including estimates based on both empirical (epidemiological) studies and judgments elicited from scientific experts, to characterize the uncertainty in the relationship between PM$_{2.5}$ concentrations and premature mortality. For this rule, we cite two key empirical studies, the American Cancer Society cohort study[42] and the extended Six Cities cohort study.[43] In the Regulatory Impact Analysis (RIA)[44] for this rule, we also include benefits estimates derived from expert judgments and other assumptions.

The EPA strives to use the best available science to support our benefits analyses. We recognize that interpretation of the science regarding air pollution and health is dynamic and evolving. After reviewing the scientific literature and recent scientific advice, we have determined that the no-threshold model is the most appropriate model for assessing the mortality benefits associated with reducing PM$_{2.5}$ exposure. Consistent with this recent advice, we are replacing the previous threshold sensitivity analysis with a new ‘‘Lowest Measured Level (LML)’’ assessment. While an LML assessment provides some insight into the level of uncertainty in the estimated PM mortality benefits, the EPA does not view the LML as a threshold and continues to quantify PM-related mortality impacts using a full range of modeled air quality concentrations.

Most of the estimated PM-related benefits in this rule would accrue to populations exposed to higher levels of PM$_{2.5}$. Using the Pope, *et al.,* (2002) study, 89 percent of the population is exposed at or above the LML of 7.5 $\mu g/m^3$. Using the Laden, *et al.,* (2006) study, 31 percent of the population is exposed above the LML of 10 $\mu g/m^3$. It is important to emphasize that we have high confidence in PM$_{2.5}$-related effects down to the lowest LML of the major cohort studies. This fact is important,

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[39] Roman, *et al.,* 2008. Expert Judgment Assessment of the Mortality Impact of Changes in Ambient Fine Particulate Matter in the U.S. Environ. Sci. Technol., 42, 7, 2268–2274.

[40] Fann, N., C.M. Fulcher, B.J. Hubbell. 2009. ‘‘The influence of location, source, and emission type in estimates of the human health benefits of reducing a ton of air pollution.’’ Air Qual Atmos Health (2009) 2:169–176.

[41] U.S. Environmental Protection Agency. 2011. *Technical support document: Estimating the benefit per ton of reducing PM$_{2.5}$ precursors from the ferroalloy sector (Draft);* EPA: Research Triangle Park, NC.

[42] Pope *et al,* 2002. ‘‘Lung Cancer, Cardiopulmonary Mortality, and Long-term Exposure to Fine Particulate Air Pollution.’’ Journal of the American Medical Association. 287:1132–1141.

[43] Laden et al, 2006. ‘‘Reduction in Fine Particulate Air Pollution and Mortality.’’ *American Journal of Respiratory and Critical Care Medicine.* 173: 667–672.

[44] U.S. Environmental Protection Agency, 2006. Final Regulatory Impact Analysis: PM$_{2.5}$ NAAQS. Prepared by Office of Air and Radiation. October. Available on the Internet at *http://www.epa.gov/ttn/ecas/ria.html.*

because as we estimate PM-related mortality among populations exposed to levels of $PM_{2.5}$ that are successively lower, our confidence in the results diminishes. However, our analysis shows that the great majority of the impacts occur at higher exposures.

This analysis does not include the type of detailed uncertainty assessment found in the 2006 p.m.2.5 NAAQS RIA because we lack the necessary air quality input and monitoring data to run the benefits model. In addition, we have not conducted any air quality modeling for this rule. However, to estimate BPT specifically for this sector we did have some updated air quality modeling. The 2006 $PM_{2.5}$ NAAQS benefits analysis provides an indication of the sensitivity of our results to various assumptions.

It should be emphasized that the monetized benefits estimates provided above do not include benefits from several important benefit categories, including reducing other air pollutants, ecosystem effects, and visibility impairment, as well as mercury and other HAPs. Although we do not have sufficient information or modeling available to provide monetized estimates for this rulemaking, we include a qualitative assessment of the health effects of these other effects in the RIA[45] for this proposed rule.

F. What demographic groups might benefit the most from this regulation?

To examine the potential for any environmental justice (EJ) issues that might be associated with the source category, we performed a demographic analysis of the at-risk population. In this analysis, we evaluated the distributions of HAP-related cancer and noncancer risks from the Ferroalloys Production source category across different social, demographic and economic groups within the populations living near these two facilities. The methodology and the results of the demographic analyses are included in a technical report, *Risk and Technology Review—Analysis of Socio-Economic Factors for Populations Living Near Ferroalloys Facilities,* available in the docket for this action.

The results of the demographic analysis are summarized in Table 8 below. These results, for various demographic groups, are based on the estimated risks from actual emissions levels for the population living within 50 km of the facilities.

TABLE 8—FERROALLOY PRODUCTION DEMOGRAPHIC RISK ANALYSIS RESULTS

	Nationwide	Population with cancer risk at or above 1-in-1 million	Population with chronic hazard index above 1
Total Population	285,000,000	26,000	28,000
Race by Percent			
White	75	97	97
All Other Races	25	3	3
Race by Percent			
White	75	97	97
African American	12	1	0.8
Native American	0.9	0.3	0.3
Other and Multiracial	12	2	1.8
Ethnicity by Percent			
Hispanic	14	1	0.7
Non-Hispanic	86	99	99
Income by Percent			
Below Poverty Level	13	13	13
Above Poverty Level	87	87	87
Education by Percent			
Over 25 and without High School Diploma	13	11	9
Over 25 and with a High School Diploma	87	89	91

The results of the Ferroalloy Production source category demographic analysis indicate that there are approximately 26,000 people exposed to a cancer risk at or above one in one million and approximately 28,000 people exposed to a chronic noncancer TOSHI greater than 1 due to emissions from the source category (we note that many of those in the first risk group are the same as those in the second). The percentages of the at-risk population in each demographic group (except for White and non-Hispanic) are similar to or lower than their respective nationwide percentages. Implementation of the provisions included in this proposal is expected to significantly reduce the number of at-risk people due to HAP emissions from these sources (from 26,000 people to about 1,000 for cancer risks and from 28,000 people to less than 10 for chronic noncancer TOSHI).

VI. Request for Comments

We are soliciting comments on all aspects of this proposed action. In addition to general comments on this proposed action, we are also interested

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[45] U.S. Environmental Protection Agency. Draft Regulatory Impact Analysis (RIA) for the Proposed Manganese Ferroalloys RTR. September 2011

in any additional data that may help to reduce the uncertainties inherent in the risk assessment 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 are available for download 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 included 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 Web page, complete the following steps:

1. Within this downloaded file, enter suggested revisions to the data fields appropriate for that information. The data fields that may be revised include the following:

Data element	Definition
Control Measure	Are control measures in place? (yes or no).
Control Measure Comment	Select control measure from list provided, and briefly describe the control measure.
Delete	Indicate here if the facility or record should be deleted.
Delete Comment	Describes the reason for deletion.
Emissions Calculation Method Code For Revised Emissions	Code description of the method used to derive emissions. For example, CEM, material balance, stack test, etc.
Emissions Process Group	Enter the general type of emissions process associated with the specified emissions point.
Fugitive Angle	Enter release angle (clockwise from true North); orientation of the y-dimension relative to true North, measured positive for clockwise starting at 0 degrees (maximum 89 degrees).
Fugitive Length	Enter dimension of the source in the east-west (x-) direction, commonly referred to as length (ft).
Fugitive Width	Enter dimension of the source in the north-south (y-) direction, commonly referred to as width (ft).
Malfunction Emissions	Enter total annual emissions due to malfunctions (tpy).
Malfunction Emissions Max Hourly	Enter maximum hourly malfunction emissions here (lb/hr).
North American Datum	Enter datum for latitude/longitude coordinates (NAD27 or NAD83); if left blank, NAD83 is assumed.
Process Comment	Enter general comments about process sources of emissions.
REVISED Address	Enter revised physical street address for MACT facility here.
REVISED City	Enter revised city name here.
REVISED County Name	Enter revised county name here.
REVISED Emissions Release Point Type	Enter revised Emissions Release Point Type here.
REVISED End Date	Enter revised End Date here.
REVISED Exit Gas Flow Rate	Enter revised Exit Gas Flowrate here (ft^3/sec).
REVISED Exit Gas Temperature	Enter revised Exit Gas Temperature here (F).
REVISED Exit Gas Velocity	Enter revised Exit Gas Velocity here (ft/sec).
REVISED Facility Category Code	Enter revised Facility Category Code here, which indicates whether facility is a major or area source.
REVISED Facility Name	Enter revised Facility Name here.
REVISED Facility Registry Identifier	Enter revised Facility Registry Identifier here, which is an ID assigned by the EPA Facility Registry System.
REVISED HAP Emissions Performance Level Code	Enter revised HAP Emissions Performance Level here.
REVISED Latitude	Enter revised Latitude here (decimal degrees).
REVISED Longitude	Enter revised Longitude here (decimal degrees).
REVISED MACT Code	Enter revised MACT Code here.
REVISED Pollutant Code	Enter revised Pollutant Code here.
REVISED Routine Emissions	Enter revised routine emissions value here (tpy).
REVISED SCC Code	Enter revised SCC Code here.
REVISED Stack Diameter	Enter revised Stack Diameter here (ft).
REVISED Stack Height	Enter revised Stack Height here (ft).
REVISED Start Date	Enter revised Start Date here.
REVISED State	Enter revised State here.
REVISED Tribal Code	Enter revised Tribal Code here.
REVISED Zip Code	Enter revised Zip Code here.
Shutdown Emissions	Enter total annual emissions due to shutdown events (tpy).
Shutdown Emissions Max Hourly	Enter maximum hourly shutdown emissions here (lb/hr).
Stack Comment	Enter general comments about emissions release points.
Startup Emissions	Enter total annual emissions due to startup events (tpy).
Startup Emissions Max Hourly	Enter maximum hourly startup emissions here (lb/hr).
Year Closed	Enter date facility stopped operations.

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

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

4. Send the entire downloaded file with suggested revisions in Microsoft® Access format and all accompanying documentation to Docket ID Number EPA–HQ–OAR–2010–0895 (through one of the methods described in the **ADDRESSES** section of this preamble). To expedite review of the revisions, it would also be helpful if you submitted a copy of your revisions to the EPA directly at *RTR@epa.gov* in addition to submitting them to the docket.

5. If you are providing comments on a facility, you need only submit one file for that facility, which 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® Access files, which 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

Under Section 3(f)(1) of Executive Order 12866 (58 FR 51735, October 4, 1993), this action is an ‘‘economically significant regulatory action’’ because it is likely to have an annual effect on the economy of $100 million or more. Accordingly, the EPA submitted this action to OMB for review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011), and any changes made in response to OMB recommendations have been documented in the docket for this action.

In addition, the EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis is contained in the RIA for this proposed rule. A copy of the analysis is available in the docket for this action, and the analysis is briefly summarized above.

The cost and benefit analyses are subject to uncertainties. More information on these uncertainties can be found in the RIA and in the cost memo for the proposal.

A summary of the monetized benefits and net benefits for the proposed rule at discount rates of 3 percent and 7 percent is in Table 2 of this preamble and a more detailed discussion of the benefits is found in section V.E of this preamble.

For more information on the benefits analysis, please refer to the RIA for this rulemaking, which is available in the docket.

B. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act,* 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by the EPA has been assigned EPA ICR number 2448.01. The information collection requirements are not enforceable until OMB approves them. The information requirements are based on notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emissions standards. These recordkeeping and reporting requirements are specifically authorized by CAA section 114 (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies set forth in 40 CFR part 2, subpart B.

We are proposing new paperwork requirements to the Ferroalloys Production source category in the form of increased frequency and number of pollutants tested for stack testing as described in § 63.1625(c) and tighter parameter monitoring requirements to demonstrate continuous compliance as described in § 63.1625(c)(6) and § 63.1626. In conjunction shop building process fugitives monitoring, we believe that sources are currently equipped with adequate monitoring equipment and that the facilities will not incur a capital cost due to this requirement.

For this proposed rule, the EPA is adding affirmative defense to the estimate of burden in the ICR. To provide the public with an estimate of the relative magnitude of the burden associated with an assertion of the affirmative defense position adopted by a source, the EPA has provided administrative adjustments to this ICR to show what the notification, recordkeeping and reporting requirements associated with the assertion of the affirmative defense might entail. The EPA's estimate for the required notification, reports and records for any individual incident, including the root cause analysis, totals $3,141 and is based on the time and effort required of a source to review relevant data, interview plant employees, and document the events surrounding a malfunction that has caused an exceedance of an emissions limit. The estimate also includes time to produce and retain the record and reports for submission to the EPA. The EPA provides this illustrative estimate of this burden because these costs are only incurred if there has been a violation and a source chooses to take advantage of the affirmative defense.

Given the variety of circumstances under which malfunctions could occur, as well as differences among sources' operation and maintenance practices, we cannot reliably predict the severity and frequency of malfunction-related excess emissions events for a particular source. It is important to note that the EPA has no basis currently for estimating the number of malfunctions that would qualify for an affirmative defense. Current historical records would be an inappropriate basis, as source owners or operators previously operated their facilities in recognition that they were exempt from the requirement to comply with emissions standards during malfunctions. Of the number of excess emissions events reported by source operators, only a small number would be expected to result from a malfunction (based on the definition above), and only a subset of excess emissions caused by malfunctions would result in the source choosing to assert the affirmative defense. Thus, we believe the number of instances in which source operators might be expected to avail themselves of the affirmative defense will be extremely small. For this reason, we estimate no more than 1 or 2 such occurrences for all sources subject to subpart XXX over the 3-year period covered by this ICR. We expect to gather information on such events in the future and will revise this estimate as better information becomes available.

We estimate two regulated entities are currently subject to subpart XXX and will be subject to all proposed standards. 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 XXX (Ferroalloys Production) is estimated to be $384,000 per year. This includes 483 labor hours per year at a total labor cost of $37,000 per year, and total non-labor capital and operation and maintenance costs of $347,000 per year. This estimate includes performance tests, notifications, reporting, and recordkeeping associated with the new requirements for front-end process vents and back-end process operations. The total burden for the Federal government (averaged over the first 3 years after the effective date of the standard) is estimated to be 48 hours per year at a total labor cost of $2,200 per year. Burden is defined at 35 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. When these ICRs are approved by OMB, the Agency will publish a technical amendment to 40 CFR part 9 in the **Federal Register** to display the OMB control numbers for the approved information collection requirements contained in the final rules.

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 number EPA–HQ–OAR–2010–0895. Submit any comments related to the ICR to the EPA and OMB. See the **ADDRESSES** section at the beginning of this notice 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 EPA. Because OMB is required to make a decision concerning the ICR between 30 and 60 days after November 23, 2011, a comment to OMB is best assured of having its full effect if OMB receives it by December 23, 2011. 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 proposed rule 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 331112 (*i.e.,* Electrometallurgical ferroalloy product manufacturing), the SBA small business size standard is 750 employees according to the SBA small business standards definitions.

After considering the economic impacts of today's proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. Neither of the companies affected by this rule is considered to be a small entity per the definition provided in this section.

D. Unfunded Mandates Reform Act

This proposed rule does not contain a Federal mandate under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538 for state, local, or tribal governments or the private sector. The proposed rule would not result in expenditures of $100 million or more for state, local, and tribal governments, in aggregate, or the private sector in any 1 year. The proposed rule imposes no enforceable duties on any State, local or tribal governments or the private sector. Thus, this proposed rule is not subject to the requirements of sections 202 or 205 of the UMRA.

This proposed rule 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 because it contains no requirements that apply to such governments nor does it impose obligations upon them.

E. Executive Order 13132: Federalism

This proposed rule 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 action are owned or operated by state governments, and, because no new requirements are being promulgated, nothing in this proposed rule will supersede State regulations. Thus, Executive Order 13132 does not apply to this proposed rule.

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 proposed rule does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). Thus, Executive Order 13175 does not apply to this action.

The EPA specifically solicits additional comment on this proposed action from tribal officials.

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

This proposed rule is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because the Agency does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children. The report, *Analysis of Socio-Economic Factors for Populations Living Near Ferroalloys Facilities,* shows that, prior to the implementation of the provisions included in this proposal, on a nationwide basis, there are approximately 26,000 people exposed to a cancer risk at or above one in one million and approximately 28,000 people exposed to a chronic noncancer TOSHI greater than 1 due to emissions from the source category. The percentages for all demographic groups, including children 18 years and younger, are similar to or lower than their respective nationwide percentages. Further, implementation of the provisions included in this proposal is expected to significantly reduce the number of at-risk people due to HAP emissions from these sources (from between 26,000 to 28,000 people to about 1,000), providing significant benefit to all the demographic groups in the at-risk population.

This proposed rule is expected to reduce environmental impacts for everyone, including children. This action proposes emissions limits at the levels based on MACT, as required by the CAA. Based on our analysis, we believe that this rule does not have a disproportionate impact on children.

The public is invited to submit comments or identify peer-reviewed studies and data that assess effects of early life exposure to manganese, lead, arsenic, nickel, or mercury.

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

This action is not a ''significant energy action'' as defined under Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001), because it is not likely to have significant adverse effect on the supply, distribution, or use of energy. This action will not create any new requirements and therefore no additional costs for sources in the energy supply, distribution, or use sectors.

I. National Technology Transfer and Advancement Act (NTTAA)

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104–113, 12(d) (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 rulemaking involves technical standards. The EPA proposes to use EPA Methods 1, 2, 3A, 3B, 4, 5, 5D, 9, 10, 26A, 30B, 316, CARB 429, SW–846 Method 3052, SW–846 Method 7471b and EPA water Method 1631E of 40 CFR Part 60, Appendix A. No applicable VCS were identified for EPA Methods 30B, 5D, 316, 1631E and CARB 429, SW–846 Method 3052, and SW–846 Method 7471b.

Two VCS were identified acceptable alternatives to EPA test methods for the purposes of this rule. The VCS standard ANSI/ASME PTC 19–10–1981–Part 10, ''Flue and Exhaust Gas Analyses'' is an acceptable alternative to Method 3B. The VCS ASTM D7520–09, ''Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere'' is an acceptable alternative to Method 9 under specified conditions. The Agency identified 18 VCS as being potentially applicable to these methods cited in this rule. However, the EPA determined that the 18 candidate VCS would not be practical due to lack of equivalency, documentation, validation data and other important technical and policy considerations. The 18 VCS and other information and conclusions, including the search and review results, are in the docket for this proposed rule. The EPA welcomes comments on this aspect of this proposed rulemaking and, specifically, invites the public to identify potentially-applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

Under section 63.7(f) and section 63.8(f) of Subpart A of the General Provisions, a source may apply to the EPA for permission to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures in the proposed rule.

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 proposed that the current health risks posed by emissions from this source category are unacceptable. There are about 26,000 to 28,000 people nationwide that are currently subject to health risks which may not be considered neglible (*i.e.,* cancer risks greater than one in one million or chronic noncancer TOSHI greater than 1) due to emissions from this source category. The demographic makeup of this ''at-risk'' population is similar to the national distribution for all demographic groups. The proposed rule will reduce the number of people in this at-risk group from between 26,000–28,000 people to about 1,000 people. Based on this analysis, the EPA is proposing that the proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations.

List of Subjects in 40 CFR Part 63

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

Dated: November 4, 2011.

Lisa P. Jackson,

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—[AMENDED]

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

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

2. Section 63.14 is amended by:

a. Adding paragraph (b)(69);

b. Revising paragraph (i)(1);

c. Revising paragraph (p)(6) and adding paragraphs (p)(8) and (p)(9); and

d. By adding paragraphs (r)(1) and (r)(2).

§ 63.14 Incorporations by reference.

(b) * * *

(69) ASTM D7520–09, ''Standard Test Method for Determining the Opacity in a Plume in an Outdoor Ambient Atmosphere,'' IBR approved for § 63.1625(b)(9).

* * * * *

(i) * * *

(1) ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus],'' IBR approved for §§ 63.309(k)(1)(iii), 63.865(b), 63.1625(b)(3)(iii), 63.3166(a)(3), 63.3360(e)(1)(iii), 63.3545(a)(3), 63.3555(a)(3), 63.4166(a)(3), 63.4362(a)(3), 63.4766(a)(3), 63.4965(a)(3), 63.5160(d)(1)(iii), 63.9307(c)(2), 63.9323(a)(3), 63.11148(e)(3)(iii), 63.11155(e)(3), 63.11162(f)(3)(iii) and (f)(4), 63.11163(g)(1)(iii) and (g)(2), 63.11410(j)(1)(iii), 63.11551(a)(2)(i)(C), table 5 to subpart DDDDD of this part, table 1 to subpart ZZZZZ of this part, and table 4 to subpart JJJJJJ of this part.

* * * * *

(p) * * *

(6) SW–846–7471B, Mercury in Solid Or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.1625(b)(10), table 6 to subpart DDDDD of this part and table 5 to subpart JJJJJJ of this part.

* * * * *

(8) SW–846–Method 3052, Microwave Assisted Acid Digestion Of Siliceous

and Organically Based Matrices, Revision 0, December 1996, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.1625(b)(10).

(9) Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry, August 2002 located at: *http://water.epa.gov/scitech/methods/cwa/metals/mercury/upload/2007_07_10_methods_;method_mercury_1631.pdf,* IBR approved for § 63.1625(b)(10).

(r) The following material is available from the California Air Resources Board (CARB), 1102 Q Street, Sacramento, California 95814, (*http://www.arb.ca.gov/testmeth/vol3/M_429.pdf*).

(1) Method 429, Determination of Polycyclic Aromatic Hydrocarbon (PAH) Emissions from Stationary Sources, Adopted September 1989, Amended July 1997, IBR approved for § 63.1625(b)(11).

(2) [Reserved]

* * * * *

Subpart XXX—[Amended]

3. Section 63.1620 is added to read as follows:

§ 63.1620 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate a new or existing ferromanganese and/or silicomanganese production facility that is a major source or is co-located at a major source of hazardous air pollutant emissions.

(b) You are subject to this subpart if you own or operate any of the following equipment as part of a ferromanganese or silicomanganese production facility:

(1) Open, semi-sealed, or sealed submerged arc furnace,

(2) Casting operations,

(3) Metal oxygen refining (MOR) process,

(4) Crushing and screening operations,

(5) Outdoor fugitive dust sources.

(c) A new affected source is any of the sources listed in paragraph (b) of this section for which construction or reconstruction commenced after November 23, 2011.

(d) Table 1 of this subpart specifies the provisions of subpart A of this part that apply to owners and operators of ferromanganese and silicomanganese production facilities subject to this subpart.

(e) If you are subject to the provisions of this subpart, you are also subject to title V permitting requirements under 40 CFR parts 70 or 71, as applicable.

(f) Emission standards in this subpart apply at all times.

4. Section 63.1621 is added to read as follows:

§ 63.1621 What are my compliance dates?

(a) Existing affected sources must be in compliance with the provisions specified in §§ 63.1620 through 63.1630 no later than [2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE].

(b) Affected sources in existence prior to November 23, 2011 must be in compliance with the provisions specified in §§ 63.1650 through 63.1661 by November 21, 2001 and until [2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE]. As of [2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE], the provisions of §§ 63.1650 through 63.1661 cease to apply to affected sources in existence prior to November 23, 2011. The provisions of §§ 63.1650 through 63.1661 remain enforceable at a source for its activities prior to [2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE].

(c) If you own or operate a new affected source that commences construction or reconstruction after November 23, 2011, you must comply with the requirements of this subpart by [EFFECTIVE DATE OF FINAL RULE], or upon startup of operations, whichever is later.

5. Section 63.1622 is added to read as follows:

§ 63.1622 What definitions apply to this subpart?

Terms in this subpart are defined in the Clean Air Act (Act), in subpart A of this part, or in this section as follows:

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Bag leak detection system means a system that is capable of continuously monitoring particulate matter (dust) loadings in the exhaust of a baghouse in order to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

Building ventilation means a system of ventilated ducts designed to place the shop building under negative pressure and to capture process fugitive emissions from the shop building.

Capture system means the collection of components used to capture the gases and fumes released from one or more emissions points and then convey the captured gas stream to a control device or to the atmosphere. A capture system may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, dampers, manifolds, plenums, and fans.

Casting means the period of time from when molten ferroalloy is removed from the tapping station until pouring into casting molds or beds is completed. This includes the following operations: pouring alloy from one ladle to another, slag separation, slag removal, and ladle transfer by crane, truck, or other conveyance.

Crushing and screening equipment means the crushers, grinders, mills, screens and conveying systems used to crush, size, and prepare for packing manganese-containing materials, including raw materials, intermediate products, and final products.

Electric arc furnace means any furnace where electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.

Ladle treatment means a post-tapping process including metal and alloy additions where chemistry adjustments are made in the ladle after furnace smelting to achieve a specified product.

Local ventilation means hoods and ductwork designed to capture process fugitive emissions close to the area where the emissions are generated (*e.g.,* tap hoods).

Metal oxygen refining (MOR) process means the reduction of the carbon content of ferromanganese through the use of oxygen.

Outdoor fugitive dust source means a stationary source from which hazardous air pollutant-bearing particles are discharged to the atmosphere due to wind or mechanical inducement such as vehicle traffic. Fugitive dust sources include plant roadways, yard areas, and outdoor material storage and transfer operations.

Plant roadway means any area at a ferromanganese and silicomanganese production facility that is subject to plant mobile equipment, such as fork lifts, front end loaders, or trucks, carrying manganese-bearing materials. Excluded from this definition are employee and visitor parking areas, provided they are not subject to traffic by plant mobile equipment.

Primary emissions means gases and emissions collected by hoods and ductwork located above an open furnace or under the cover of a semi-closed or sealed furnace.

Process fugitive emissions source means a source of hazardous air pollutant emissions that is associated with ferromanganese or silicomanganese production, but is not the primary exhaust stream from an electric arc furnace, MOR or crushing and screening equipment, and is not a fugitive dust source. Process fugitive sources include emissions that escape capture from the electric arc furnace, tapping operations, casting operations, ladle treatment, MOR or crushing or screening equipment.

Shop building means the building which houses one or more electric arc furnaces.

Shutdown means the cessation of operation of an affected source for any purpose.

Startup means the setting in operation of an affected source for any purpose.

Tapping emissions means the gases and emissions associated with removal of product from the electric arc furnace under normal operating conditions, such as removal of metal under normal pressure and movement by gravity down the spout into the ladle and filling the ladle.

Tapping period means the time from when a tap hole is opened until the time a tap hole is closed.

6. Section 63.1623 is added to read as follows:

§ 63.1623 What are the emissions standards for new, reconstructed and existing facilities?

(a) *Electric arc furnaces.* You must install, operate, and maintain a capture system that collects the emissions from each electric arc furnace (including charging, melting, and tapping operations and emissions from any vent stacks) and conveys the collected emissions to a control device for the removal of the pollutants specified in the emissions standards specified in paragraphs (a)(1) through (a)(6) of this section.

(1) *Particulate matter emissions.*

(i) You must not discharge exhaust gases (including primary and tapping emissions) containing particulate matter in excess of 9.3 milligrams per dry standard cubic meter (mg/dscm), corrected to 2 percent carbon dioxide (CO_2) into the atmosphere from any new or reconstructed electric arc furnace. This emission limit must be met by any furnace vent stacks.

(ii) You must not discharge exhaust gases (including primary and tapping emissions) containing particulate matter in excess of 24 mg/dscm, corrected to 2 percent CO_2 into the atmosphere from any existing electric arc furnace. This emission limit must be met by any furnace vent stacks.

(2) *Mercury emissions.* You must not discharge exhaust gases (including primary and tapping emissions) containing mercury emissions in excess of 16 µg/dscm, corrected to 2 percent CO_2 into the atmosphere from any new, reconstructed or existing electric arc furnace.

(3) *Polycyclic aromatic hydrocarbon emissions.* You must not discharge exhaust gases (including primary and tapping emissions) containing polycyclic aromatic hydrocarbon emissions in excess of 89 µg/dscm, corrected to 2 percent CO_2 into the atmosphere from any new, reconstructed or existing electric arc furnace.

(4) *Hydrochloric acid emissions.* You must not discharge exhaust gases (including primary and tapping emissions) containing hydrochloric acid emissions in excess of 809 µg/dscm, corrected to 2 percent CO_2 into the atmosphere from any new, reconstructed or existing electric arc furnace.

(5) *Formaldehyde emissions.* You must not discharge exhaust gases (including primary and tapping emissions) containing formaldehyde emissions in excess of 201 µg/dscm, corrected to 2 percent CO_2 into the atmosphere from any new, reconstructed or existing electric arc furnace.

(b) *Process fugitive emissions.*

(1) You must install, operate, and maintain a capture system that collects all of the process fugitive emissions from the shop building (including tapping, casting, ladle treatment and crushing and screening equipment process fugitives) at a negative pressure of at least 0.007 inches of water, and conveys the collected emissions to a control device. You must not discharge into the atmosphere emissions from the control device containing particulate matter in excess of 24 mg/dscm, corrected to 2 percent CO_2.

(2) You must not cause emissions exiting from a shop building, to exceed 10 percent opacity for more than one 6-minute period.

(3) As an alternative to meeting the requirements specified in paragraph (b)(1) of this section, you can elect to demonstrate compliance by meeting the requirements of paragraphs (b)(3)(i) through (b)(3)(ii) of this section.

(i) You must install compliance monitors on or near the plant boundary, at locations approved by the Administrator, to demonstrate that the manganese concentration in air is at all times maintained below a 10-sample rolling average value of 0.10 µg/m3 at each monitor.

(A) Samples must be collected every 6 days. All samples are 24-hr integrated samples.

(B) Calculate a 10-sample rolling average to demonstrate compliance with the action level specified in paragraph (b)(3)(i) of this section. Missed or invalidated samples must be made up only on the established site-specific 1-in 6-day schedule to include the required number of makeup samples to achieve a minimum of 10 valid samples).

(C) Collect particles in the PM10 size fraction at a set flow rate of 16.7 l/minute using a 47 mm Teflon filter.

(D) Conduct the analysis using an EPA method (such as compendium method IO–3.5) and ensure the manganese method detection limit (MDL) is no greater than 0.01 µg/m^3.

(E) All data, to include values below MDL, must be reported. Under no circumstances are data value substitutions (*e.g.,* ½ MDL) acceptable.

(ii)(A) The monitoring system must include at least two ambient monitors and at least one of these monitors must be in a location that is expected to have the highest air concentrations at or near the facility boundary based on ambient dispersion modeling or other methods approved by the Administrator.

(B) You must submit a written plan describing and explaining the basis for the design and adequacy of the compliance monitoring network, the sampling, analytical and quality assurance procedures and the justification for any data adjustments within 45 days after the effective date of this subpart.

(C) The Administrator at any time may require changes in or expansion of, the monitoring program, including additional sampling and more frequent sampling, or revisions to the analytical protocols and network design.

(c) *Local ventilation emissions.* If you operate local ventilation to capture tapping, casting, or ladle treatment emissions and direct them to a control device other than one associated with the electric arc furnace, you must not discharge into the atmosphere any captured emissions containing particulate matter in excess of 24 mg/dscm, corrected to 2 percent CO_2.

(d) *MOR process.* You must not discharge into the atmosphere from any new, reconstructed or existing MOR process exhaust gases containing particulate matter in excess of 3.9 mg/dscm, corrected to 2 percent CO_2.

(e) *Crushing and screening equipment.* You must not discharge into the atmosphere from any new, reconstructed, or existing piece of equipment associated with crushing and screening exhaust gases containing particulate matter in excess of 13 mg/dscm.

(f) *Emissions Averaging Option.*

(1) As an alternative to meeting the emission standards specified in paragraphs (a)(1) through (a)(6) of this section on an electric arc furnace-specific basis, and if you have more than one existing electric arc furnace located at one or more contiguous properties, which are under common control of the same person (or persons under common control), you may demonstrate compliance by emission averaging among the existing electric arc furnaces, if your averaged emissions for such electric arc furnaces are equal to or less than the applicable emission limit.

(2) As an alternative to meeting the emission standard specified in paragraph (b)(1) of this section on a building ventilation control device-specific basis, and if you have more than one existing building ventilation control device located at one or more contiguous properties, which are under common control of the same person (or persons under common control), you may demonstrate compliance by emission averaging among the existing building ventilation control devices, if your averaged emissions for such building ventilation control devices are equal to or less than the applicable emission limit.

(3) As an alternative to meeting the emission standard specified in paragraph (e) of this section on a crushing and screening equipment control device-specific basis, and if you have more than one existing crushing and screening equipment control device located at one or more contiguous properties, which are under common control of the same person (or persons under common control), you may demonstrate compliance by emission averaging among the existing crushing or screening equipment control devices, if your averaged emissions for such crushing or screening equipment control devices are equal to or less than the applicable emission limit.

(g) The averaged emissions rate from the existing equipment specified in paragraph (f) of this section participating in the emissions averaging option must be in compliance with the emission standards specified in paragraphs (a), (b) and (e) of this section by the compliance date specified in § 63.1621. You must develop, and submit to the applicable regulatory authority for review and approval upon request, an implementation plan for emission averaging according to the following procedures and requirements in paragraphs (g)(1) through (g)(4) of this section.

(1) You must submit the implementation plan no later than 180 days before the date that the facility intends to demonstrate compliance using the emission averaging option.

(2) You must include the information contained in paragraphs (g)(2)(i) through (g)(2)(vii) of this section in your implementation plan for all emission sources included in an emissions average:

(i) The identification of all existing equipment specified in paragraph (f) of this section in the applicable averaging group, including for each either the applicable HAP emission level or the control technology installed as of [DATE 60 DAYS AFTER EFFECTIVE DATE OF THE FINAL RULE] and the date on which you are requesting emission averaging to commence;

(ii) A description of how you will comply with the monitoring procedures specified in § 63.1626 for each averaging group;

(iii) The specific control technology to be used for each piece of equipment specified in paragraph (f) of this section in the averaging group and the date of its installation or application;

(iv) The test plan for the measurement of particulate matter, hydrochloric acid, formaldehyde and mercury emissions, as applicable, in accordance with the requirements in § 63.1625 and the planned test dates to ensure that averaged units are tested concurrently or with minimal differences in the testing dates;

(v) The operating parameters to be monitored for each control system or device consistent with § 63.1626 and a description of how the operating limits will be determined;

(vi) If you request to monitor an alternative operating parameter pursuant to § 63.8, you must also include:

(A) A description of the parameter(s) to be monitored and an explanation of the criteria used to select the parameter(s); and

(B) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device; the frequency and content of monitoring, reporting, and recordkeeping requirements; and a demonstration, to the satisfaction of the applicable regulatory authority, that the proposed monitoring frequency is sufficient to represent control device operating conditions; and

(vii) A demonstration that compliance with each of the applicable emission limit(s) will be achieved under representative operating conditions.

(3) The regulatory authority shall review and approve or disapprove the plan according to the following criteria:

(i) Whether the content of the plan includes all of the information specified in paragraph (g)(2) of this section; and

(ii) Whether the plan presents sufficient information to determine that compliance will be achieved and maintained.

(4) The applicable regulatory authority shall not approve an emission averaging implementation plan containing any of the following provisions:

(i) Any averaging between emissions of differing pollutants or between differing sources; or

(ii) The inclusion of any emission source other than an existing unit in the same source category.

(h) At all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

7. Section 63.1624 is added to read as follows:

§ 63.1624 What are the operational and work practice standards for new, reconstructed and existing facilities?

(a) *Process fugitives sources.*

(1) If you are complying with the standard specified in § 63.1623(b)(1), you must prepare and operate according to a process fugitives ventilation plan for each shop building.

(2) You prepare a process fugitives ventilation schematic for each shop building indicating duct size and location, enclosure and hood sizes and locations, control device types, size and locations, and exhaust locations should be developed. The process fugitives ventilation system schematic must be annotated with the location and size of each shop building air supply unit and each shop building exhaust fan.

(3) You must conduct a baseline survey to establish actual air flow and static pressure values before and after each emission control device and in each branch of the process ventilation system after each enclosure or hood. You must also determine actual air flow

and static pressure values for each shop building air supply and exhaust device. You must demonstrate that air supply and exhaust are balanced.

(4) You must repeat the baseline survey at least every 5 years or following significant ventilation system changes.

(5) The process fugitives ventilation plan must contain a description of each enclosure and hood with explanation demonstrating that adequate control of the process source is being achieved or actions planned to improve performance.

(6) The process fugitives ventilation plan must be adequate to ensure that the building is continuously maintained at a negative pressure of at least 0.007 inches of water.

(7) The process fugitives ventilation plan must identify critical maintenance actions, schedule to complete, and verification record of completion.

(8) You must submit a copy of the process fugitives ventilation plan to the designated permitting authority on or before the applicable compliance date for the affected source as specified in § 63.1621. The requirement for you to operate the facility according to a written process fugitives ventilation plan must be incorporated in the operating permit for the facility that is issued by the designated permitting authority under part 70 of this chapter.

(b) *Outdoor fugitive dust sources.*

(1) You must prepare, and at all times operate according to, an outdoor fugitive dust control plan that describes in detail the measures that will be put in place to control outdoor fugitive dust emissions from the individual fugitive dust sources at the facility.

(2) You must submit a copy of the outdoor fugitive dust control plan to the designated permitting authority on or before the applicable compliance date for the affected source as specified in § 63.1621. The requirement for you to operate the facility according to a written outdoor fugitive dust control plan must be incorporated in the operating permit for the facility that is issued by the designated permitting authority under part 70 of this chapter.

(3) You are permitted to use existing manuals that describe the measures in place to control outdoor fugitive dust sources required as part of a State implementation plan or other federally enforceable requirement for particulate matter to satisfy the requirements of paragraph (b)(1) of this section.

8. Section 63.1625 is added to read as follows:

§ 63.1625 What are the performance test and compliance requirements for new, reconstructed and existing facilities?

(a) *Performance testing.*

(1) All performance tests must be conducted according to the requirements in § 63.7 of subpart A.

(2) Each performance test must consist of three separate and complete runs using the applicable test methods.

(3) Each run must be conducted under conditions that are representative of normal process operations.

(4) Performance tests conducted on air pollution control devices serving electric arc furnaces must be conducted such that at least one tapping period, or at least 20 minutes of a tapping period, whichever is less, is included in at least two of the three runs. The sampling time for each run must be at least as long as three times the average tapping period of the tested furnace, but no less than 60 minutes.

(5) You must conduct the performance tests specified in paragraph (c) of this section under such conditions as the Administrator specifies based on representative performance of the affected source for the period being tested. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(b) Test methods. The following test methods in appendices of part 60 or 63 of this chapter or as specified elsewhere must be used to determine compliance with the emission standards.

(1) Method 1 of Appendix A–1 of 40 CFR part 60 to select the sampling port location and the number of traverse points.

(2) Method 2 of Appendix A–1 of 40 CFR part 60 to determine the volumetric flow rate of the stack gas.

(3)(i) Method 3A or 3B of Appendix A–2 of 40 CFR part 60 (with integrated bag sampling) to determine the outlet stack and inlet oxygen and CO_2 content.

(ii) You must measure CO_2 concentrations at both the inlet and outlet of the positive pressure fabric filter in conjunction with the pollutant sampling in order to correct pollutant concentrations for dilution and to determine isokinetic sampling rates.

(iii) As an alternative to EPA Reference Method 3B, ASME PTC–19–10–1981–Part 10, ‘‘Flue and Exhaust Gas Analyses’’ may be used (incorporated by reference, see 40 CFR 63.14).

(4) Method 4 of Appendix A–3 of 40 CFR part 60 to determine the moisture content of the stack gas.

(5)(i) Method 5 of Appendix A–3 of 40 CFR part 60 to determine the particulate matter concentration of the stack gas for negative pressure baghouses and positive pressure baghouses with stacks.

(ii) Method 5D of Appendix A–3 of 40 CFR part 60 to determine particulate matter concentration and volumetric flow rate of the stack gas for positive pressure baghouses without stacks.

(iii) The sample volume for each run must be a minimum of 4.0 cubic meters (141.2 cubic feet). For Method 5 testing only, you may choose to collect less than 4.0 cubic meters per run provided that the filterable mass collected (*e.g.,* net filter mass plus mass of nozzle, probe and filter holder rinses) is equal to or greater than 10 mg. If the total mass collected for two of three of the runs is less than 10 mg, you must conduct at least one additional test run that produces at least 10 mg of filterable mass collected (*i.e.,* at a greater sample volume). Report the results of all test runs.

(6) Method 30B of Appendix A–8 of 40 CFR part 60 to measure mercury. Apply the minimum sample volume determination procedures as per the method.

(7)(i) Method 26A of Appendix A–8 of 40 CFR part 60 to determine outlet stack or inlet hydrochloric acid concentration.

(ii) Collect a minimum volume of 2 cubic meters.

(8)(i) Method 316 of Appendix A of 40 CFR part 63 to determine outlet stack or inlet formaldehyde.

(ii) Collect a minimum volume of 1.0 cubic meter.

(9) Method 9 of Appendix A–4 of 40 CFR part 60 to determine opacity. ASTM D7520–09, ‘‘Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere’’ may be used (incorporated by reference, see 40 CFR 63.14) with the following conditions:

(i) During the digital camera opacity technique (DCOT) certification procedure outlined in Section 9.2 of ASTM D7520–09, you or the DCOT vendor must present the plumes in front of various backgrounds of color and contrast representing conditions anticipated during field use such as blue sky, trees and mixed backgrounds (clouds and/or a sparse tree stand).

(ii) You must also have standard operating procedures in place including daily or other frequency quality checks to ensure the equipment is within manufacturing specifications as outlined in Section 8.1 of ASTM D7520–09.

(iii) You must follow the recordkeeping procedures outlined in § 63.10(b)(1) for the DCOT certification, compliance report, data sheets and all raw unaltered JPEGs used for opacity and certification determination.

(iv) You or the DCOT vendor must have a minimum of four (4) independent technology users apply the software to determine the visible opacity of the 300 certification plumes. For each set of 25 plumes, the user may not exceed 15 percent opacity of any one reading and the average error must not exceed 7.5 percent opacity.

(v) Use of this approved alternative does not provide or imply a certification or validation of any vendor's hardware or software. The onus to maintain and verify the certification and/or training of the DCOT camera, software and operator in accordance with ASTM D7520–09 and these requirements is on the facility, DCOT operator and DCOT vendor.

(10) Methods to determine the mercury content of manganese ore including a total metals digestion technique, SW–846 Method 3052, and a mercury specific analysis method, SW–846 Method 7471b (Cold Vapor AA) or Water Method 1631E (Cold Vapor Atomic Fluorescence).

(11) California Air Resources Board (CARB) Method 429, Determination of Polycyclic Aromatic Hydrocarbon (PAH) Emissions from Stationary Sources to determine total PAH emissions. The method is available from California Resources Board, 1102 Q Street, Sacramento, California 95814, (*http://www.arb.ca.gov/testmeth/vol3/M_429.pdf*).

(12) The owner or operator may use alternative measurement methods approved by the Administrator following the procedures described in § 63.7(f) of subpart A.

(c) *Compliance demonstration with the emission standards.*

(1) You must conduct an initial performance test for air pollution control devices or vent stacks subject to § 63.1623(a) through (e) to demonstrate compliance with the applicable emission standards.

(2) You must conduct performance tests every 5 years for the air pollution control devices and vent stacks associated with the electric arc furnaces and furnace building ventilation systems. The results of these periodic tests will be used to demonstrate compliance with the emission standards in § 63.1623(a)(1) through (a)(5), (b)(1) and (b)(2), as applicable.

(3) For any air pollution control device that serves tapping emissions combined with non-furnace emissions, such as the MOR process, or equipment associated with crushing and screening, casting or ladle treatment, you must conduct a performance test at least every 5 years. The results of these tests will be used to demonstrate compliance with the emission standards in § 63.1623(c) through (e), as applicable.

(4) Compliance is demonstrated for all sources performing emissions tests if the average concentration for the three runs comprising the performance test does not exceed the standard or if you successfully comply with the emission averaging option specified in § 63.1623(f).

(5) *Operating Limits.* You must establish parameter operating limits according to paragraphs (c)(5)(i) through (c)(5)(vi) of this section. Unless otherwise specified, compliance with each established operating limit shall be demonstrated for each 24-hour operating day.

(i) For a wet particulate matter scrubber, you must establish the minimum liquid flow rate and pressure drop as your operating limits during the three-run performance test. If you use a wet particulate matter scrubber and you conduct separate performance tests for particulate matter, you must establish one set of minimum liquid flow rate and pressure drop operating limits. If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the highest minimum hourly average values established during the performance tests.

(ii) For a wet acid gas scrubber, you must establish the minimum liquid flow rate and pH, as your operating limits during the three-run performance test. If you use a wet acid gas scrubber and you conduct separate performance tests for hydrochloric acid, you must establish one set of minimum liquid flow rate and pH operating limits. If you conduct multiple performance tests, you must set the minimum liquid flow rate and pH operating limits at the highest minimum hourly average values established during the performance tests.

(iii) For a dry scrubber, dry sorbent injection (DSI) system or activated carbon injection system, you must establish the minimum hourly average sorbent or activated carbon injection rate, as measured during the three-run performance test as your operating limit.

(iv) For emission sources with fabric filters that choose to demonstrate continuous compliance through bag leak detection systems you must install a bag leak detection system according to the requirements in § 63.1626(d), and you must set your operating limit such that the sum duration of bag leak detection system alarms does not exceed 5 percent of the process operating time during a 6-month period.

(v) If you choose to demonstrate continuous compliance through a particulate matter CEMS, you must determine an operating limit (particulate matter concentration in mg/dscm) during performance testing for initial particulate matter compliance. The operating limit will be the average of the PM filterable results of the three Method 5 or Method 5D of Appendix A–3 of 40 CFR part 60 performance test runs. To determine continuous compliance, the hourly average PM concentrations will be averaged on a rolling 30 operating day basis. Each 30 operating day average would have to meet the PM operating limit.

(v) For any furnace stack, you must establish a weighted average mercury concentration of the manganese ore being used in the furnace during the emission test. Collect a sample of all ores used in the furnace and prepare a weighted average based on the relative mass of each type of ore used in the furnace charge.

(d) *Compliance demonstration with shop building opacity standards.*

(1)(i) If you are subject to § 63.1623(b)(2), you must conduct initial opacity observations of the shop building to demonstrate compliance with the applicable opacity standards according to § 63.6(h)(5), which addresses the conduct of opacity or visible emission observations.

(ii) You must conduct the opacity observations according to EPA Method 9 of 40 CFR part 60, Appendix A–4, for a minimum of 60 minutes to include at one, or at least 20 minutes of a tapping period, whichever is less, in at least two of the three runs to coincide with each performance test run of the associated control device.

(iii) Repeat this opacity observation at least every 5 years during the periodic performance tests required pursuant to paragraph (c)(2) of this section.

(2)(i) When demonstrating initial compliance with the shop building opacity standard, as required by paragraph (d)(1) of this section, you must simultaneously establish parameter values for one of the following: The capture system fan motor amperes and all capture system damper positions, the total volumetric flow rate to the air pollution control device and all capture system damper positions, or volumetric flow rate through each separately ducted hood that comprises the capture system.

(ii) You may petition the Administrator to reestablish these parameters whenever you can demonstrate to the Administrator's satisfaction that the electric arc furnace operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters determined during the most recent demonstration of compliance must be maintained at the appropriate level for each applicable period.

(iii) You will demonstrate compliance by installing, operating, and maintaining a digital differential pressure device that shows you are maintaining the shop building under negative pressure to at least 0.007 inches of water.

(3) You will demonstrate continuing compliance with the opacity standards by following the monitoring requirements specified in § 63.1626(h) and the reporting and recordkeeping requirements specified in § 63.1629(b)(5).

(e) *Compliance demonstration with the operational and work practice standards.*

(1) *Process fugitives sources.* You will demonstrate compliance by developing and maintaining a process fugitives ventilation plan, by reporting any deviations from the plan and by taking necessary corrective actions to correct deviations or deficiencies.

(2) *Outdoor fugitive dust sources.* You will demonstrate compliance by developing and maintaining an outdoor fugitive dust control plan, by reporting any deviations from the plan and by taking necessary corrective actions to correct deviations or deficiencies.

(3) *Baghouses equipped with bag leak detection systems.* You will demonstrate compliance with the bag leak detection system requirements by developing analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in § 60.57c(h).

9. Section 63.1626 is added to read as follows:

§ 63.1626 What monitoring requirements must I meet?

(a) *Baghouse Monitoring.* You must prepare, and at all times operate according to, a standard operating procedures manual that describes in detail procedures for inspection, maintenance, and bag leak detection and corrective action plans for all baghouses (fabric filters or cartridge filters) that are used to control process vents, process fugitive, or outdoor fugitive dust emissions from any source subject to the emissions standards in § 63.1623, including those used to control emissions from building ventilation.

(b) You must submit the standard operating procedures manual for baghouses required by paragraph (a) of this section to the Administrator or delegated authority for review and approval.

(c) Unless the baghouse is equipped with a bag leak detection system, the procedures that you specify in the standard operating procedures manual for inspections and routine maintenance must, at a minimum, include the requirements of paragraphs (c)(1) and (c)(2) of this section.

(1) You must observe the baghouse outlet on a daily basis for the presence of any visible emissions.

(2) In addition to the daily visible emissions observation, you must conduct the following activities:

(i) Weekly confirmation that dust is being removed from hoppers through visual inspection, or equivalent means of ensuring the proper functioning of removal mechanisms.

(ii) Daily check of compressed air supply for pulse-jet baghouses.

(iii) An appropriate methodology for monitoring cleaning cycles to ensure proper operation.

(iv) Monthly check of bag cleaning mechanisms for proper functioning through visual inspection or equivalent means.

(v) Quarterly visual check of bag tension on reverse air and shaker-type baghouses to ensure that the bags are not kinked (kneed or bent) or lying on their sides. Such checks are not required for shaker-type baghouses using self-tensioning (spring loaded) devices.

(vi) Quarterly confirmation of the physical integrity of the baghouse structure through visual inspection of the baghouse interior for air leaks.

(vii) Semiannual inspection of fans for wear, material buildup, and corrosion through visual inspection, vibration detectors, or equivalent means.

(d) *Bag leak detection system.*

(1) For each baghouse used to control emissions from an electric arc furnace or building ventilation system, you must install, operate, and maintain a bag leak detection system according to paragraphs (d)(2) through (d)(4) of this section, unless a system meeting the requirements of paragraph (i) of this section, for a CEMS and continuous emissions rate monitoring system, is installed for monitoring the concentration of particulate matter. You may choose to install, operate and maintain a bag leak detection system for any other baghouse in operation at the facility according to paragraphs (d)(2) through (d)(4) of this section.

(2) The procedures you specified in the standard operating procedures manual for baghouse maintenance must include, at a minimum, a preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance.

(3) Each bag leak detection system must meet the specifications and requirements in paragraphs (d)(3)(i) through (d)(3)(viii) of this section.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1.0 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.

(ii) The bag leak detection system sensor must provide output of relative PM loadings.

(iii) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loadings is detected over a preset level.

(iv) You must install and operate the bag leak detection system in a manner consistent with the guidance provided in ''Office of Air Quality Planning and Standards (OAQPS) Fabric Filter Bag Leak Detection Guidance'' EPA–454/R–98–015, September 1997 (incorporated by reference) and the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system must, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(vi) Following initial adjustment, you must not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in the approved standard operating procedures manual required under paragraph (a) of this section. You cannot increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless such adjustment follows a complete baghouse inspection that demonstrates that the baghouse is in good operating condition.

(vii) You must install the bag leak detector downstream of the baghouse.

(viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(4) You must include in the standard operating procedures manual required by paragraph (a) of this section a corrective action plan that specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan must include, at a minimum, the procedures that you will use to determine and record the time and cause of the alarm as well as

the corrective actions taken to minimize emissions as specified in paragraphs (d)(4)(i) and (d)(4)(ii) of this section.

(i) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the alarm.

(ii) The cause of the alarm must be alleviated by taking the necessary corrective action(s) that may include, but not be limited to, those listed in paragraphs (d)(4)(i)(A) through (d)(4)(i)(F) of this section.

(A) Inspecting the baghouse for air leaks, torn or broken filter elements, or any other malfunction that may cause an increase in emissions.

(B) Sealing off defective bags or filter media.

(C) Replacing defective bags or filter media, or otherwise repairing the control device.

(D) Sealing off a defective baghouse compartment.

(E) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(F) Shutting down the process producing the particulate emissions.

(e) If you use a wet particulate matter scrubber, you must collect the pressure drop and liquid flow rate monitoring system data according to § 63.1629, reduce the data to 24-hour block averages and maintain the 24-hour average pressure drop and liquid flow-rate at or above the operating limits established during the performance test according to § 63.1625(c)(5)(i).

(f) [Reserved]

(g) If you use a dry scrubber, DSI sorbent injection or carbon injection, you must collect the sorbent or carbon injection rate monitoring system data for the dry scrubber, DSI or ACI according to § 63.1629, reducing the data to 24-hour block averages; and maintain the 24-hour average sorbent or carbon injection rate at or above the operating limit established during the performance test according to § 63.1625(c)(5)(iii).

(h) *Shop building opacity.* In order to demonstrate continuous compliance with the opacity standards in § 63.1623, you must comply with one of the monitoring options in paragraphs (h)(1), (h)(2), (h)(3) or (h)(8) of this section. The selected option must be consistent with that selected during the initial performance test described in § 63.1625(d)(2). Alternatively, you may use the provisions of § 63.8(f) to request approval to use an alternative monitoring method.

(1) You must check and record the control system fan motor amperes and capture system damper positions once per shift.

(2) You must install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood.

(3) You must install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the inlet of the air pollution control device and check and record the capture system damper positions once per shift.

(4) The flow rate monitoring devices must meet the following requirements:

(i) Be installed in an appropriate location in the exhaust duct such that reproducible flow rate monitoring will result.

(ii) Have an accuracy ±10 percent over its normal operating range and be calibrated according to the manufacturer's instructions.

(5) The Administrator may require you to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A–1 of part 60 of this chapter.

(6) Failure to maintain the appropriate capture system parameters (fan motor amperes, flow rate, and/or damper positions) establishes the need to initiate corrective action as soon as practicable after the monitoring excursion in order to minimize excess emissions.

(7) You must install, operate, and maintain a digital differential pressure monitoring system to continuously monitor each total enclosure as described in paragraphs (h)(7)(i) through (h)(7)(v) of this section.

(i) You must install and maintain a minimum of one building digital differential pressure monitoring system at each of the following three walls in the shop building:

(A) The leeward wall.

(B) The windward wall.

(C) An exterior wall that connects the leeward and windward wall at a location defined by the intersection of a perpendicular line between a point on the connecting wall and a point on its furthest opposite exterior wall, and intersecting within plus or minus ten meters of the midpoint of a straight line between the two other monitors specified. The midpoint monitor must not be located on the same wall as either of the other two monitors.

(ii) The digital differential pressure monitoring systems must be certified by the manufacturer to be capable of measuring and displaying negative pressure in the range of 0.01 to 0.2 mm mercury (0.005 to 0.11 inches of water) with a minimum accuracy of plus or minus 0.001 mm mercury (0.0005 inches of water).

(iii) You must equip each digital differential pressure monitoring system with a continuous recorder.

(iv) You must calibrate each digital differential pressure monitoring system in accordance with manufacturer's specifications at least once every 12 calendar months or more frequently if recommended by the manufacturer.

(v) You must equip the digital differential pressure monitoring system with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage.

(8) If you comply with the requirements specified in § 63.1623(b)(3), you must install, operate and maintain a continuous monitoring system for the measurement of manganese concentrations in air as specified in paragraphs (h)(8)(i) through (h)(8)(v) of this section.

(i) You must operate a minimum of two compliance monitors sufficient in location and frequency of sample collection to detect expected maximum concentrations of manganese in air due to emissions from the affected source(s) in accordance with a written plan as described in paragraph (h)(8)(ii) of this section and approved by the Administrator. The plan must include descriptions of the sampling and analytical methods used. At least one 24-hour sample must be collected from each monitor every 6 days. All records pertaining to the implementation and results of the compliance monitoring shall be kept on-site for a period of no less than 5 years from the date of generation of the record.

(ii) You must submit a written plan describing and explaining the basis for the design and adequacy of the compliance monitoring network, the sampling, sample handling and custody, analytical procedures, quality assurance procedures, recordkeeping procedures and any other related procedures, and the justification for any seasonal, background, or other data adjustments within [45 DAYS AFTER EFFECTIVE DATE OF FINAL RULE].

(iii) The Administrator at any time may require changes in, or expansion of, the monitoring program, including additional sampling and, more frequent sampling, revisions to the analytical protocols and network design.

(iv) If all rolling 10-sample average concentrations of manganese in air measured by the compliance monitoring system are less than 50 percent of the manganese concentration limits specified in § 63.1623(b)(3)(i) for 3 consecutive years, you may submit a proposed revised plan to reduce the monitoring sampling and analysis frequency to the Administrator for review. If approved by the Administrator, you may adjust your monitoring accordingly.

(v) For any subsequent period, if any rolling 10-sample average manganese concentration in air measured at any monitor in the monitoring system exceeds 50 percent of the concentration limits specified in § 63.1623(b)(3), you must resume monitoring pursuant to paragraph (h)(8)(i)(A) of this section at all monitors until another 3 consecutive years of manganese concentration measurements is demonstrated to be less than 50 percent of the manganese concentration limits specified in § 63.1623(b)(3).

(i) *Furnace Capture System.* You must perform monthly inspections of the equipment that is important to the performance of the furnace capture system, including capture of both primary and tapping emissions. This inspection must include an examination of the physical condition of the equipment (*e.g.,* has hood location been changed or obstructed because of contact with cranes or ladles), to include detecting holes in ductwork or hoods, flow constrictions in ductwork due to dents or accumulated dust, and operational status of flow rate controllers (pressure sensors, dampers, damper switches, *etc.*). Any deficiencies must be recorded and proper maintenance and repairs performed.

(j) *Requirements for sources using CMS.* If you demonstrate compliance with any applicable emissions limit through use of a continuous monitoring system (CMS), where a CMS includes a continuous parameter monitoring system (CPMS) as well as a continuous emissions monitoring system (CEMS), you must develop a site-specific monitoring plan and submit this site-specific monitoring plan, if requested, at least 60 days before your initial performance evaluation (where applicable) of your CMS. Your site-specific monitoring plan must address the monitoring system design, data collection, and the quality assurance and quality control elements outlined in this section and in § 63.8(d). You must install, operate, and maintain each CMS according to the procedures in your approved site-specific monitoring plan. Using the process described in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (j)(1) through (j)(6) of this section in your site-specific monitoring plan.

(1) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer and data acquisition and calculations;

(2) Sampling interface location such that the monitoring system will provide representative measurements;

(3) Equipment performance checks, system accuracy audits, or other audit procedures;

(4) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1) and (c)(3); and

(5) Conditions that define a continuous monitoring system that is out of control consistent with § 63.8(c)(7)(i) and for responding to out of control periods consistent with § 63.8(c)(7)(ii) and (c)(8) or Appendix A to this subpart, as applicable.

(6) Ongoing recordkeeping and reporting procedures in accordance with provisions in § 63.10(c), (e)(1) and (e)(2)(i) and Appendix A to this subpart, as applicable.

(k) If you have an operating limit that requires the use of a CPMS, you must install, operate, and maintain each continuous parameter monitoring system according to the procedures in paragraphs (k)(1) through (k)(7) of this section.

(1) The continuous parameter monitoring system must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four successive cycles of operation to have a valid hour of data.

(2) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments), you must operate the CMS at all times the affected source is operating. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.

(3) You may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other required data collection periods in assessing the operation of the control device and associated control system.

(4) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required quality monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements.

(5) You must conduct other CPMS equipment performance checks, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least once every 12 months.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(7) You must record the results of each inspection, calibration, and validation check.

(l) *CPMS for measuring gaseous flow.*

(1) Use a flow sensor with a measurement sensitivity of 5 percent of the flow rate or 10 cubic feet per minute, whichever is greater,

(2) Check all mechanical connections for leakage at least every month, and

(3) Perform a visual inspection at least every 3 months of all components of the flow CPMS for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if your flow CPMS is not equipped with a redundant flow sensor.

(m) *CPMS for measuring liquid flow.*

(1) Use a flow sensor with a measurement sensitivity of 2 percent of the flow rate and

(2) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(n) *CPMS for measuring pressure.*

(1) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion and

(2) Use a gauge with a minimum tolerance of 1.27 centimeters of water or a transducer with a minimum tolerance of 1 percent of the pressure range.

(3) Perform checks at least once each process operating day to ensure pressure measurements are not obstructed (*e.g.,* check for pressure tap pluggage daily).

(o) *CPMS measuring flow of sorbent or carbon (e.g., weigh belt, weigh hopper, or hopper flow measurement device).* Install and calibrate the device in accordance with manufacturer's procedures and specifications.

(p) *CPMS for measuring pH.*

(1) Ensure the sample is properly mixed and representative of the fluid to be measured.

(2) Check the pH meter's calibration on at least two points every 8 hours of process operation.

(q) *Particulate Matter CEMS.* If you are using a CEMS to measure particulate matter emissions to meet requirements of this subpart, you must install, certify, operate, and maintain the particulate matter CEMS as specified in paragraphs (q)(1) through (q)(4) of this section.

(1) You must conduct a performance evaluation of the PM CEMS according to the applicable requirements of § 60.13, and Performance Specification 11 at 40 CFR part 60, Appendix B of this chapter.

(2) During each PM correlation testing run of the CEMS required by Performance Specification 11 at 40 CFR part 60, Appendix B of this chapter, PM and oxygen (or carbon dioxide) collect data concurrently (or within a 30- to 60-minute period) by both the CEMS and by conducting performance tests using Method 5 or 5D at 40 CFR part 60, Appendix A–3 or Method 17 at 40 CFR part 60, Appendix A–6 of this chapter.

(3) Perform quarterly accuracy determinations and daily calibration drift tests in accordance with Procedure 2 at 40 CFR part 60, Appendix F of this chapter. Relative Response Audits must be performed annually and Response Correlation Audits must be performed every 3 years.

(4) Within 60 days after the date of completing each CEMS relative accuracy test audit or performance test conducted to demonstrate compliance with this subpart, you must submit the relative accuracy test audit data and performance test data to the EPA by successfully submitting the data electronically into the EPA's Central Data Exchange by using the Electronic Reporting Tool (see *http://www.epa.gov/ttnchie1/ert/*).

(r) Ore Sampling Requirements.

(1) Following completion of the initial compliance demonstration where you established a weighted average mercury concentration of the manganese ore being used in the furnace during the emission test, you must determine the weighted average mercury concentration of the manganese ores used in the process on a monthly basis. If you introduce a new type of ore, you must analyze the sample according the methods specified in § 63.1625(b)(10) and factor the results into your updated weighted average mercury concentration.

(2) If the weighted average mercury concentration is more than 10 percent higher than the weighted average operating limit, and you are operating an activated carbon injection system, you must reassess the activated carbon injection rate and revise the rate according to procedures established in your CMS monitoring plan.

(3) If the weighted average mercury concentration is more than 10 percent higher than the weighted average operating limit, and you are not operating an activated carbon injection system, you must retest the control device within 30 days to demonstrate compliance with the mercury emission limit and establish a new weighted average mercury concentration and associated activated carbon injection rate.

10. Section 63.1627 is added to read as follows:

§ 63.1627 What is an affirmative defense for exceedence of an emissions limit during malfunction?

In response to an action to enforce the standards set forth in paragraph § 63.1623 you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined at 40 CFR 63.2. Appropriate penalties may be assessed, however, if the respondent fails to meet its burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) *Affirmative Defense.* To establish the affirmative defense in any action to enforce such a limit, you must meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The excess emissions:

(i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) *Notification.*

(1) If you experience an exceedence of the facilities' emission limit(s) during a malfunction, you must notify the EPA Administrator by telephone or facsimile (Fax) transmission as soon as possible, but no later than two (2) business days after the initial occurrence of the malfunction, if you wish to avail yourself of an affirmative defense to civil penalties for that malfunction.

(2) You must also submit a written report to the EPA Administrator, within 45 days of the initial occurrence of the exceedence of the standard in § 63.1623, to demonstrate, with all necessary supporting documentation, that you have met the requirements set forth in paragraph (a) of this section.

(3) You may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45-day period. Until a request for an extension has been approved by the Administrator, you are subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedances.

11. Section 63.1628 is added to read as follows:

§ 63.1628 What notification requirements must I meet?

(a) You must comply with all of the notification requirements of § 63.9 of subpart A, General Provisions.

Electronic notifications are encouraged when possible.

(b)(1) You must submit the process fugitives ventilation plan required under § 63.1624(a), the outdoor fugitive dust control plan required under § 63.1624(b), the site-specific monitoring plan for CMS required under § 63.1626(j), the standard operating procedures manual for baghouses required under § 63.1626(a) and the manganese monitoring alternative plan required under § 63.1626(h)(8) to the Administrator or delegated authority along with a notification that you are seeking review and approval of these plans and procedures. You must submit this notification no later than [*1 YEAR AFTER EFFECTIVE DATE OF FINAL RULE*]. For sources that commenced construction or reconstruction after [*EFFECTIVE DATE OF FINAL RULE*], you must submit this notification no later than 180 days before startup of the constructed or reconstructed ferromanganese or silicomanganese production facility. For an affected source that has received a construction permit from the Administrator or delegated authority on or before [*EFFECTIVE DATE OF FINAL RULE*], you must submit this notification no later than [*1 YEAR AFTER EFFECTIVE DATE OF FINAL RULE*].

(2) The plans and procedures documents submitted as required under paragraph (b)(1) of this section must be submitted to the Administrator in electronic format for review and approval of the initial submittal and whenever an update is made to the procedure.

12. Section 63.1629 is added to read as follows:

§ 63.1629 What recordkeeping and reporting requirements must I meet?

(a) You must comply with all of the recordkeeping and reporting requirements specified in § 63.10 of the General Provisions that are referenced in Table 1 to this subpart.

(1) Records must be maintained in a form suitable and readily available for expeditious review, according to § 63.10(b)(1). However, electronic recordkeeping and reporting is encouraged, and required for some records and reports.

(2) Records must be kept on site for at least 2 years after the date of occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

(b) You must maintain, for a period of 5 years, records of the information listed in paragraphs (b)(1) through (b)(13) of this section.

(1) Electronic records of the bag leak detection system output.

(2) An identification of the date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the corrective actions taken, and the date and time the cause of the alarm was corrected.

(3) All records of inspections and maintenance activities required under § 63.1626(a) as part of the practices described in the standard operating procedures manual for baghouses required under § 63.1626(c).

(4) Electronic records of the pressure drop and water flow rate values for wet scrubbers used to control particulate matter emissions as required in § 63.1626(e), identification of periods when the 1-hour average pressure drop and water flow rate values below the established minimum established and an explanation of the corrective actions taken.

(5) Electronic records of the shop building capture system monitoring required under § 63.1626(h)(1) through (h)(3), (h)(7) and (h)(8), as applicable, identification of periods when the capture system parameters were not maintained or the manganese concentration exceeded the rolling 10-sample concentration level as required under § 63.1623(b)(3) and an explanation of the corrective actions taken.

(6) Records of the results of monthly inspections of the furnace capture system required under § 63.1626(i).

(7) Electronic records of the continuous flow monitors or pressure monitors required under § 63.1626(j) and (k) and an identification of periods when the flow rate or pressure was not maintained as required in § 63.1626(e).

(8) Electronic records of the output of any CEMS installed to monitor particulate matter emissions meeting the requirements of § 63.1626(j).

(9) Records of the total sorbent injection rate required under § 63.1626(k).

(10) Records of the occurrence and duration of each startup and/or shutdown.

(11) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control equipment and monitoring equipment.

(12) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.1623(g), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(13) Records that explain the periods when the procedures outlined in the process fugitives ventilation plan required under § 63.1624(a), the fugitives dust control plan required under § 63.1624(b), the site-specific monitoring plan for CMS required under § 63.1626(j), the standard operating procedures manual for baghouses required under § 63.1626(a) and the manganese monitoring alternative plan required under § 63.1626(h)(8) were not followed and the corrective actions taken.

(c) You must comply with all of the reporting requirements specified in § 63.10 of the General Provisions that are referenced in Table 1 to this subpart.

(1) You must submit reports no less frequently than specified under § 63.10(e)(3) of the General Provisions.

(2) Once a source reports a violation of the standard or excess emissions, you must follow the reporting format required under § 63.10(e)(3) until a request to reduce reporting frequency is approved by the Administrator.

(d) In addition to the information required under the applicable sections of § 63.10, you must include in the reports required under paragraph (c) of this section the information specified in paragraphs (d)(1) through (d)(8) of this section.

(1) Reports that explain the periods when the procedures outlined in the process fugitives ventilation plan required under § 63.1624(a), the fugitives dust control plan required under § 63.1624(b), the site-specific monitoring plan for CMS required under § 63.1626(j), the standard operating procedures manual for baghouses required under § 63.1626(a) and the manganese monitoring alternative plan required under § 63.1626(h)(8) were not followed and the corrective actions taken.

(2) Reports that identify the periods when the average hourly pressure drop or flow rate of venturi scrubbers used to control particulate emissions dropped below the levels established in § 63.1626(e) and an explanation of the corrective actions taken.

(3) *Bag leak detection system.* Reports including the following information:

(i) Records of all alarms.

(ii) Description of the actions taken following each bag leak detection system alarm.

(4) Reports of the shop building capture system monitoring required under § 63.1626(h)(1) through (h)(3), (h)(7) and (h)(8), as applicable, identification of periods when the capture system parameters were not

maintained or the manganese concentration exceeded the rolling 10-sample concentration level as required under § 63.1623(b)(3) and an explanation of the corrective actions taken.

(5) Reports of the results of monthly inspections of the furnace capture system required under § 63.1626(g).

(6) Reports of the CPMS required under § 63.1626, an identification of periods when the monitored parameters were not maintained as required in § 63.1626, and corrective actions taken.

(7) If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction that occurred during the reporting period and caused or may have caused any applicable emissions limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.1623(g), including actions taken to correct a malfunction.

(8) You must submit records pursuant to paragraphs (d)(8)(i) through (d)(8)(iii) of this section.

(i) Within 60 days after the date of completing each performance test, as defined in § 63.2 and as required in this subpart, you must submit performance test data, except opacity data, electronically to the EPA's Central Data Exchange by using the Electronic Reporting Tool (see *http://www.epa.gov/ttnchie1/ert/*). Only data collected using test methods compatible with the Electronic Reporting Tool are subject to this requirement to be submitted electronically into the EPA's WebFIRE database.

(ii) Within 60 days after the date of completing each CEMS performance evaluation test, as defined in § 63.2 and required by this subpart, you must submit the relative accuracy test audit data electronically into the EPA's Central Data Exchange by using the Electronic Reporting Tool as mentioned in paragraph (d)(8)(i) of this section. Only data collected using test methods compatible with the Electronic Reporting Tool are subject to this requirement to be submitted electronically into the EPA's WebFIRE database.

(iii) All reports required by this subpart not subject to the requirements in paragraph (d)(8)(i) and (d)(8)(ii) of this section must be sent to the Administrator at the appropriate address listed in § 63.13. The Administrator or the delegated authority may request a report in any form suitable for the specific case (*e.g.,* by electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraph (d)(9)(i) and (d)(9)(ii) of this section in paper format.

13. Section 63.1630 is added to read as follows:

§ 63.1630 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable state, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to a state, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if this subpart is delegated to a state, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the state, local, or tribal agency.

(c) The authorities that cannot be delegated to state, local, or tribal agencies are as specified in paragraphs (c)(1) through (c)(4) of this section.

(1) Approval of alternatives to requirements in §§ 63.1620 and 63.1621 and 63.1623 and 63.1624.

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under § 63.8(f), as defined in § 63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.

14. Section 63.1650 is amended by:

a. Revising paragraph (d);

b. Removing and reserving paragraph (e)(1); and

c. Revising paragraph (e)(2) to read as follows:

§ 63.1650 Applicability and Compliance Dates.

* * * * *

(d) Table 1 to this subpart specifies the provisions of subpart A of this part that apply to owners and operators of ferroalloy production facilities subject to this subpart.

(e) * * *

(1) [Reserved]

(2) Each owner or operator of a new or reconstructed affected source that commences construction or reconstruction after August 4, 1998 and before November 23, 2011 must comply with the requirements of this subpart by May 20, 1999 or upon startup of operations, whichever is later.

15. Section 63.1651 is amended by adding a definition for ''Affirmative defense'' in alphabetic order to read as follows:

§ 63.1651 Definitions.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

* * * * *

16. Section 63.1652 is amended by adding paragraph (f) to read as follows:

§ 63.1652 Emission standards.

* * * * *

(f) At all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

17. Section 63.1656 is amended by:

a. Adding paragraph (a)(6);

b. Revising paragraph (e)(1); and

c. Removing and reserving paragraph (e)(2)(ii) to read as follows:

§ 63.1656 Performance testing, test methods, and compliance demonstrations.

(a) * * *

(6) You must conduct the performance tests specified in paragraph (c) of this section under such conditions as the Administrator specifies based on representative performance of the affected source for the period being tested. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

* * * * *

(e) * * *

(1) *Fugitive dust sources.* Failure to have a fugitive dust control plan or failure to report deviations from the plan and take necessary corrective action would be a violation of the

general duty to ensure that fugitive dust sources are operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions per § 63.1652(f).

(2) * * *

(ii) [Reserved]

* * * * *

18. Section 63.1657 is amended by:

a. Revising paragraph (a)(6);

b. Revising paragraph (b)(3); and

c. Revising paragraph (c)(7) to read as follows:

§ 63.1657 Monitoring requirements.

(a) * * *

(6) Failure to monitor or failure to take corrective action under the requirements of paragraph (a) of this section would be a violation of the general duty to operate in a manner consistent with good air pollution control practices that minimizes emissions per § 63.1652(f).

(b) * * *

(3) Failure to monitor or failure to take corrective action under the requirements of paragraph (b) of this section would be a violation of the general duty to operate in a manner consistent with good air pollution control practices that minimizes emissions per § 63.1652(f).

(c) * * *

(7) Failure to monitor or failure to take corrective action under the requirements of paragraph (c) of this section would be a violation of the general duty to operate in a manner consistent with good air pollution control practices that minimizes emissions per § 63.1652(f).

19. Section 63.1659 is amended by revising paragraph (a)(4) to read as follows:

(a) * * *

(4) *Reporting malfunctions.* If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.1652(f), including actions taken to correct a malfunction.

* * * * *

20. Section 63.1660 is amended by:

a. Revising paragraphs (a)(2)(i) and (a)(2)(ii); and

b. Removing and reserving paragraphs (a)(2)(iv) and (a)(2)(v) to read as follows:

(a) * * *

(2) * * *

(i) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control equipment and monitoring equipment;

(ii) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.1652(f), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation;

* * * * *

(iv) [Reserved]

(v) [Reserved]

* * * * *

21. Section 63.1662 is added to read as follows:

§ 63.1662 Affirmative defense for exceedance of emission limit during malfunction.

In response to an action to enforce the standards set forth in § 63.1652 through § 63.1654 you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined at 40 CFR 63.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The excess emissions:

(i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner, and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) Notification. The owner or operator of the affected source experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than two business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in § 63.1652 through § 63.1654 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

22. Add Table 1 to the end of subpart XXX to read as follows:

Table 1 to Subpart XXX of Part 63—General Provisions Applicability to Subpart XXX

Reference	Applies to subpart XXX	Comment
63.1	Yes.	
63.2	Yes.	
63.3	Yes.	
63.4	Yes.	
63.5	Yes.	
63.6(a), (b), (c)	Yes.	
63.6(d)	No	Section reserved.
63.6(e)(1)(i)	No	See 63.1623(g) and 63.1652(f) for general duty requirement.
63.6(e)(1)(ii)	No.	
63.6(e)(1)(iii)	Yes.	
63.6(e)(2)	No	Section reserved.
63.6(e)(3)	No.	
63.6(f)(1)	No.	
6.6(f)(2)–(f)(3).		
63.6(g)	Yes.	
63.6(h)(1)	No.	
63.6(h)(2)–(h)(9)	Yes.	
63.6(i)	Yes.	
63.6(j)	Yes.	
§ 63.7(a)–(d)	Yes.	
§ 63.7(e)(1)	No	See 63.1625(a)(5) and 63.1656(a)(6).
§ 63.7(e)(2)–(e)(4)	Yes.	
63.7(f), (g), (h)	Yes.	
63.8(a)–(b)	Yes.	
63.8(c)(1)(i)	No	See 63.1623(g) and 63.1652(f) for general duty requirement.
63.8(c)(1)(ii)	Yes.	
63.8(c)(1)(iii)	No.	
63.8(c)(2)–(d)(2)	Yes.	
63.8(d)(3)	Yes, except for last sentence.	
63.8(e)–(g)	Yes.	
63.9(a), (b), (c), (e), (g), (h)(1) through (3), (h)(5) and (6), (i) and (j).	Yes.	
63.9(f)	Yes.	
63.9(h)(4)	No	Reserved.
63.10 (a)	Yes.	
63.10 (b)(1)	Yes.	
63.10(b)(2)(i)	No.	
63.10(b)(2)(ii)	No	See 63.1629 and 63.1660 for recordkeeping of occurrence and duration of malfunctions and recordkeeping of actions taken during malfunction.
63.10(b)(2)(iii)	Yes.	
63.10(b)(2)(iv)–(b)(2)(v)	No.	
63.10(b)(2)(vi)–(b)(2)(xiv)	Yes.	
63.(10)(b)(3)	Yes.	
63.10(c)(1)–(9)	Yes.	
63.10(c)(10)–(11)	No	See 63.1629 and 63.1630 for recordkeeping of malfunctions.
63.10(c)(12)–(c)(14)	Yes.	
63.10(c)(15)	No.	
63.10(d)(1)–(4)	Yes.	
63.10(d)(5)	No	See 63.1629(d)(8) and 63.1659(a)(4) for reporting of malfunctions.
63.10(e)–((f)	Yes.	
63.11	No	Flares will not be used to comply with the emission limits.
63.12 to 63.15	Yes.	

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