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40 CFR Part 63
National Emission Standards for Coke Oven Batteries; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[OAR–2003–0051; FRL–7895–8]

RIN 2060–AJ96

National Emission Standards for Coke Oven Batteries

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; amendments.

SUMMARY: On October 27, 1993 (58 FR 57898), pursuant to section 112 of the Clean Air Act (CAA), the EPA issued technology-based national emission standards to control hazardous air pollutants (HAP) emitted by coke oven batteries. This action amends the standards to address residual risks under section 112(f) and the 8-year review requirements of section 112(d)(6).

DATES: The final rule amendments will be effective on April 15, 2005. Existing sources will be required to comply with the final rule as amended on July 14, 2005. The incorporation by reference of certain publications listed in the final rule amendments is approved by the Director of the Federal Register as of April 15, 2005.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. OAR–2003–0051. All documents in the docket are listed in the EDOCKET index at *http://www.epa.gov/edocket.* Although listed in the index, some information is not publicly available, *i.e.*, confidential business information or other information whose disclosure is restricted by statute. Certain other information, such as copyrighted materials, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in EDOCKET or in hard copy form at the Air and Radiation Docket, Docket ID No. OAR–2003–0051, EPA/DC, EPA West, Room B102, 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 Air and Radiation Docket is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: Mr. Bob Schell, Emission Standards Division (C439–02), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541–4116, e-mail address: *schell.bob@epa.gov.*

SUPPLEMENTARY INFORMATION: *Regulated Entities.* Categories and entities potentially regulated by this action include:

Category	NAICS code[1]	Examples of regulated entities
Industry	331111 324199	Existing by-product coke oven batteries subject to emission limitations in 40 CFR 63.302(a)(2) and nonrecovery coke oven batteries subject to new source emission limitations in 40 CFR 63.303(b). These batteries are subject to maximum achievable control technology (MACT) requirements and are known as ''MACT track'' batteries.
Federal government	.....	Not affected.
State/local/tribal government	.....	Not affected.

[1] North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility is regulated by this action, you should examine the applicability criteria in § 63.300 of the national emission standards for coke oven batteries. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of today's final rule amendments will also be available on the Worldwide Web (WWW) through the Technology Transfer Network (TTN). Following the Administrator's signature, a copy of the final rule amendments will be placed on the TTN's policy and guidance page for newly proposed or promulgated rules at *http://www.epa.gov/ttn/oarpg.* The TTN provides information and technology exchange in various areas of air pollution control.

Judicial Review. Under section 307(b)(1) of the CAA, judicial review of the final rule amendments is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by June 14, 2005. Under section 307(d)(7)(B) of the CAA, only an objection to the final rule amendments that was raised with reasonable specificity during the period for public comment can be raised during judicial review. Under section 307(b)(2) of the CAA, the requirements that are the subject of this document may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

Outline. The information presented in this preamble is organized as follows:

I. Background
II. Summary of the Final Rule Amendments
  A. What Are the Affected Sources and Emissions Points?
  B. What Are the Requirements?
III. Response to Major Comments
  A. Comments on the Overall Risk Program and Policy
  B. Risk Comments Specific to Coke Ovens
  C. Comments on Section 112(d)(6) Review Policy
  D. Specific Comments on Section 112(d)(6) Review of Coke Ovens
IV. Statutory and Executive Order Reviews
  A. Executive Order 12866: Regulatory Planning and Review
  B. Paperwork Reduction Act
  C. Regulatory Flexibility Act
  D. Unfunded Mandates Reform Act
  E. Executive Order 13132: Federalism
  F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
  G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks
  H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use
  I. National Technology Transfer Advancement Act
  J. Congressional Review Act

I. Background

EPA promulgated national emission standards for charging, door leaks, and topside leaks from coke ovens batteries at 58 FR 57898, October 27, 1993 (40 CFR part 63, subpart L) under section 112(d) of the CAA. Section 112(f)(2) of the CAA requires EPA to determine for each section 112(d) source category if the promulgation of additional standards is required ''in order to provide an ample margin of safety to protect public health.'' We also have

discretion to impose a more stringent emissions standard to prevent adverse environmental effect if such action is justified in light of costs, energy, safety, and other relevant factors. On August 9, 2004 (69 FR 48338), we proposed amendments to the national emission standards for coke oven batteries that included more stringent requirements for certain by-product coke oven batteries to address health risks remaining after implementation of the 1993 national emission standards. The proposed amendments also included provisions pursuant to the 8-year review requirements of CAA section 112(d)(6).

In our proposal preamble, we presented the maximum individual risk (MIR) estimate for coke oven emissions from those emission points subject to the 1993 national emission standards. The MIR estimate was 200 in a million (69 FR 48346). We also explained at proposal that, as required under the Benzene NESHAP [1] decision framework (codified in section 112(f)(2)(A) and (B)), we considered the level of risk from the limits in the 1993 national emission standards (*i.e.*, 200 in a million) to be acceptable after considering several factors (69 FR 48347–48350). These factors included the number of exposed people with cancer risk level estimates greater than 1 in a million (approximately 300,000 people or 7 percent of the exposed population), the number of people for whom cancer risk levels are greater than 100 in a million (less than 10 people), the estimate of annual incidence of cancer (0.04), and the projected absence of adverse noncancer effects.[2] Also considered in the evaluation in the proposal was the protective nature of many of the assumptions leading to these estimates of potential residual risk.

Under section 112(o)(7) of the CAA, we are required to issue revised cancer guidelines prior to the promulgation of the first residual risk rule under section 112(f) (an implication being that we should consider these revisions in the various residual risk rules). Since our August 2004 proposal, we have issued revised cancer guidelines and also supplemental guidance which deal specifically with assessing the potential added susceptibility from early-life exposure to carcinogens. We have considered our decisions in these final rule amendments in light of the revised cancer guidelines and supplemental guidance. The supplemental guidance provides an approach for adjusting risk estimates to incorporate the potential for increased risk due to early-life exposures to chemicals that are thought to be carcinogenic by a mutagenic mode of action. For these chemicals, the supplemental guidance indicates that, in lieu of chemical-specific data on which age or life-stage specific risk estimates or potencies can be determined, default ''age dependent adjustment factors'' can be applied when assessing cancer risk for early-life exposures to chemicals which cause cancer through a mutagenic mode. In light of this guidance, EPA has evaluated the available scientific information associated with pollutants emitted by coke ovens and believes it is appropriate to apply the default factors in the risk assessment supporting today's final rule amendments. The chief HAP emitted by coke ovens, coke oven emissions, is specifically enumerated in CAA section 112(b)(1). Coke oven emissions are likely to cause cancer through a mutagenic mode of action. We base this conclusion on the data on coke oven emissions mutagenicity which has been summarized by EPA[3] [4] and the International Agency for Research on Cancer,[5] and reported in numerous, more recent studies available in the peer-reviewed literature. The result of that determination is that our individual and population cancer risk estimates for lifetime exposures that begin at birth and extend through adulthood will increase from proposal by a factor of 1.6, [6] a factor that considers the assumption of constant exposure over the 70-year exposure duration (birth to adulthood) we used in estimating individual and population risk. These further assumptions of increased cancer potency and birth to 70-year residence of the entire population in the area assessed were not part of the proposed rule amendments.

Based on the supplemental guidance, we have revised our risk estimates by applying the default adjustment factors to account for increased susceptibility that might occur due to exposures that occur from birth to 16 years of age. The increased risk due to consideration of the exposures assumed to occur from birth to 16 years of age (included in the 70-year total exposure duration) results in a revised upper-bound estimate. For the source category associated with the 1993 national emission standards, the revised MIR estimate is 300 in a million. We have chosen to also apply the default adjustment to other analyses used to support the determination that the MIR of 200 in a million was acceptable. However, we acknowledge that more refined modeling of exposure would be necessary to adequately express the effect of early life susceptibility to overall estimates of population risk. For example, not all individuals are expected to be born in the area assessed. Nonetheless, after application of the default adjustment factor, our conclusions in the proposed rule amendments do not change and further refinement of the assessment was not warranted. The assumptions of exposure initiation (at birth for all) and cancer risk for coke oven emissions based on the application of the supplemental guidance would affect the number of exposed people with cancer risk levels greater than 1 in a million (500,000 people or 12 percent of the exposed population), the number of people exposed to risk levels greater than 100 in a million (approximately 70 people), the annual incidence of cancer (0.06), and the uncertainty associated

[1] National Emission Standard for Hazardous Air Pollutants (NESHAP): Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Stryene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants (54 FR 38044, September 14, 1989).

[2] All estimates of population risk and estimated annual incidence in these final rule amendments are based on an upper-bound cancer unit risk estimate, a 70-year exposure duration, and our best estimates of exposure concentrations; cancer risk estimates using best estimates for exposure duration and unit cancer risk would yield lower risk estimates.

[3] Carcinogen Assessment of Coke Oven Emissions: Final Report. U.S. Environmental Protection Agency, Office of Health and Environmental Assessment. EPA–600/6–82–003F. February 1984.

[4] ''Coke Oven Emissions.'' U.S. Environmental Protection Agency. Integrated Risk Information System (IRIS). 1989. Available at: *http://www.epa.gov/irissubst/0395.htm.*

[5] IARC Monographs Supplement 7. International Agency for Research on Cancer. 1987, page 176. Available at: *http://www-cie.iarc.fr/htdocs/monographs/suppl7/coke production.html.*

[6] The ''Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens' recommends applying default adjustment factors to early life stage exposures to carcinogens acting through a mutagenic mode of action. The Supplemental Guidance recommends an integrative approach that can be used to assess total lifetime risk resulting from lifetime or less-than-lifetime exposure during a specific portion of a lifetime. The following adjustments represent the approach suggested in the Supplemental Guidance: (1) For exposures before 2 years of age (*i.e.*, spanning a 2-year time interval from the first day of birth up until a child's second birthday), a 10-fold adjustment; (2) for exposures between 2 and less than 16 years of age (*i.e.*, spanning a 14-year time interval from a child's second birthday up until their sixteenth birthday), a 3-fold adjustment; and (3) for exposures after turning 16 years of age, no adjustment. In applying this factor to population risk, risk bins shown in appendix I of the risk assessment document were multiplied by 1.6, and the populations associated with those new risk bins were recounted depending on whether the bin risks were greater than 1 in a million, 10 in a million, or 100 in a million. The cancer incidence value was directly multiplied by the 1.6 factor. The analysis and more detailed calculations may be found in the docket for this rulemaking.

with the estimates of risk. The remaining factors we considered (*e.g.*, actual emissions versus allowable emissions and the projected absence of adverse noncancer effects) are unaffected.

Although we are adjusting risk estimates upward to reflect the new supplemental guidance, these estimated risk increases must also be tempered by consideration of other factors that were discussed at proposal and in the risk assessment document, and the further protective assumption added to the risk assessment that all individuals are born in the assessed area. For example, the coke oven battery sources are consistently controlling emissions below the level allowed by the 1993 national emission standards, which results in a 30 percent reduction in the estimated MIR. Our 70-year exposure assumption includes exposures from birth to 70 years. If exposures were from 3 years to 73 years, the adjustment factor would be less than 1.6. If exposures were from 16 years to 86 years, no adjustment would be necessary. In addition, we used a health-protective assumption of a 70-year exposure duration in our risk estimates; however, using the national average residency time of 12 years would reduce the estimate of risk by a factor of six (69 FR 48347). Our 1984 unit risk estimate (URE) for coke oven emissions is considered a plausible upper-bound estimate; actual potency is likely to be lower. After considering all of these factors, we continue to consider the MIR due to emissions at the limits in the 1993 national emission standards to be an acceptable level of risk (within the meaning of the Benzene NESHAP decision framework discussed at 69 FR 48339–48340, 48347–48348). As mentioned in the recently published cancer guidelines, we will continue to develop and present, to the extent practicable, an appropriate central estimate and appropriate lower and upper-bound estimates of cancer potency. Development of new methods or estimates is a process that will require independent peer review.

We also re-examined our decision as to what level of control is necessary to provide an ample margin of safety to protect human health in light of applying the early-life exposure default adjustment factors. The 2010 lowest achievable emission rate (LAER) levels (which we are adopting as residual risk standards in today's action) will reduce the MIR from exposure to coke oven emissions to 270 in a million. In addition, the reductions will result in approximately 200,000 fewer people having excess lifetime cancer risks of greater than 1 in a million from exposure to these emissions. After considering these estimates and the other factors explained in detail in the preamble to the proposed rule amendments, we continue to believe that the 2010 LAER levels provide an ample margin of safety to protect public health.

The proposal allowed a 60-day comment period ending October 8, 2004. The EPA's EDOCKET system logged a total of 16 public comments in Docket Number OAR–2003–0051. Commenters included one state association, two state agencies, a coalition of three major environmental groups, 9 industry trade associations, one steel company, and two individual commenters. Each of their comments is summarized in our response to comments document contained in the rulemaking docket.

II. Summary of the Final Rule Amendments

A. What Are the Affected Sources and Emission Points?

The affected sources are each coke oven battery subject to the emission limitations in 40 CFR 63.302 or 40 CFR 63.303 (the 1993 national emission standards). There are five affected sources in this category: Four existing by-product recovery batteries and one nonrecovery battery. The final rule amendments apply to emissions from doors, topside port lids, offtake systems, and charging on existing by-product coke oven batteries. Provisions are also included for emissions from doors on new and existing nonrecovery batteries and charging on new nonrecovery batteries.

B. What Are the Requirements?

For existing by-product batteries, the final rule amendments limit visible emissions from coke oven doors to 4 percent leaking doors for tall batteries and for batteries owned or operated by a foundry coke producer. Short batteries are limited to 3.3 percent leaking doors. Visible emissions from other emission points are limited to 0.4 percent leaking topside port lids and 2.5 percent leaking offtake systems. No change has been made to the limit for charging—emissions must not exceed 12 seconds of visible emissions per charge. Each of these visible emission limits is based on a 30-day rolling average. The final rule amendments replace the less stringent limits that became effective on January 1, 2003, for MACT track batteries and are equivalent to the limits that will become effective on January 1, 2010, for batteries subject to LAER track requirements. We have not changed the standards for new by-product batteries.

The monitoring, reporting, and recordkeeping requirements in the existing national emission standards continue to apply to existing by-product coke oven batteries on the MACT track. These requirements include daily performance tests to determine compliance with the visible emission limits. Each performance test must be conducted by a visible emissions observer certified according to the test method requirements. A daily inspection of the collecting main for leaks is also required. Specific work practice standards must also be implemented if required by the provisions in 40 CFR 63.306(c). Under the existing standards, companies must make semiannual compliance certifications; report any uncontrolled venting episodes or startup, shutdown, or malfunction events; and keep records of information needed to demonstrate compliance.

We are also issuing amendments for the improved control of charging emissions from a new nonrecovery battery (*i.e.*, constructed or reconstructed on or after August 9, 2004). Fugitive charging emissions are subject to an opacity limit of 20 percent. A weekly performance test is required to determine the average opacity of five consecutive charges for each charging emissions capture system. The certified observer must determine and record the highest 3-minute average opacity for each charge; compliance is based on the average of the highest 3-minute averages for five consecutive charges. Emissions of particulate matter (PM), a surrogate for particulate HAP in coke oven emissions, from a charging emissions control device are limited to 0.0081 pounds per ton (lb/ton) of dry coal charged. A performance test using EPA Method 5 (40 CFR part 60, appendix A) is required to demonstrate initial compliance with subsequent performance tests at least once during each title V permit term. If any visible emissions are observed from a charging emissions control device, the owner or operator is required to take corrective action and follow up with a visible emissions observation by EPA Method 9 (40 CFR part 60, appendix A) to ensure that the corrective action had been successful. Any Method 9 observation of the charging emissions control device greater than 10 percent opacity must be reported as a deviation in the semiannual compliance report. The final rule amendments also require the owner or operator to implement a work practice standard designed to ensure

that the draft on the oven is maximized during charging.

We are also promulgating a work practice standard for the control of door leaks from all nonrecovery coke oven batteries on the MACT track. The owner or operator is required to observe each coke oven door after each charge and record the oven number of any door from which visible emissions occur. If a coke oven door leak is observed at any time during the coking cycle, the owner or operator must take corrective action and stop the leak within 15 minutes from the time the leak is first observed. After a door leak has been stopped, no additional leaks are allowed from doors on that oven for the remainder of that oven's coking cycle.

We are allowing an exception to the 15-minute limit period for stopping a door leak. The owner or operator may have up to 45 minutes to stop a door leak no more than twice per battery during any semiannual reporting period. The limit of two occurrences does not apply if a worker must enter a cokeside shed to stop a leaking door under a cokeside shed. In that case, the owner or operator may have up to 45 minutes to take corrective action and stop the leak. The owner or operator also must operate the evacuation system and control device for the cokeside shed at all times that there is a leaking door under the cokeside shed.

The owner or operator of a nonrecovery battery is also required to identify malfunctions that might cause a door to leak, establish preventative measures, and specify types of corrective actions for such events in its startup, shutdown, and malfunction plan. The final rule amendments also include recordkeeping and reporting requirements necessary to demonstrate initial and continuous compliance.

We are also amending the provision in 40 CFR 63.303(a)(2) for existing nonrecovery batteries to state that the work practice standard for charging also applies to new nonrecovery batteries. These work practices are described in 40 CFR 63.306(b)(6).

We are requiring that the owner or operator of existing by-product coke oven batteries on the MACT track comply by July 14, 2005. See CAA section 112(f)(4)(A), which states that existing sources must comply with section 112(f) residual risk standards within 90 days of the standard's effective date. We are also requiring that nonrecovery coke oven batteries on the MACT track comply by July 14, 2005 (or upon startup for a new nonrecovery battery for which construction commenced after August 9, 2004).

The basis for the final rule amendments is set out in the preamble to the proposed rule amendments (69 FR 48338) unless otherwise explained in our responses to the major comments in this preamble. Our responses to all the comments are included in the docket.

III. Response to Major Comments

A. Comments on the Overall Risk Program and Policy

1. Ample Margin of Safety

Comment: One commenter argued that CAA section 112(f)(2) makes clear that EPA's residual risk standards must reduce the lifetime risk to the single individual most exposed to emissions from any one of these sources to less than 1 in a million. In contrast, another commenter stated that EPA has properly construed the statute as establishing a trigger under which EPA must undertake a residual risk determination but not as establishing the level of risk reduction that must be achieved and further stated that EPA is not required to provide protection that achieves the 1 in a million excess cancer risk level.

Response: The commenter's argument that the statute requires section 112(f) residual risk standards to reduce cancer risk to a most exposed individual to less than 1 in a million lacks a basis in the statutory text or in policy. Section 112(f)(2)(A) does indeed require us to promulgate standards if the ''lifetime excess cancer risk to the individual most exposed to emissions from a source in a category or subcategory'' is greater than 1 in a million. It does not establish what the level of the standard might be. See ''A Legislative History of the Clean Air Act Amendments of 1990,'' page 1789 (Conference Report), stating that ''[s]ection 112(f) contains a trigger for standards for non-threshold pollutants. * * *'' Rather, the level of the standard is to ''provide an ample margin of safety'' to protect public health. ''Ample margin of safety'' is to be interpreted under the two-step formulation established by the Benzene NESHAP and CAA section 112(f)(2)(B).

Under that formulation, there is no single risk level establishing what constitutes an ample margin of safety (69 FR 48348). Rather, the Benzene NESHAP approach codified in section 112(f)(2) is deliberately flexible, requiring consideration of a range of factors (among them estimates of quantitative risk, incidence, and numbers of exposed persons within various risk ranges; scientific uncertainties; and weight of evidence) when determining acceptability of risk (the first step in the ample margin of safety determination) (54 FR 38045). Determination of ample margin of safety, the second step of the process, requires further consideration of these factors, plus consideration of technical feasibility, cost, economic impact, and other factors (54 FR 38046). As we stated in our ''Residual Risk Report to Congress'' [7] issued under CAA section 112(f)(1), we do not consider the 1 in a million individual additional cancer risk level as a ''bright line'' mandated level of protection for establishing residual risk standards, but rather as a trigger point to evaluate whether additional reductions are necessary to provide an ample margin of safety to protect public health. This interpretation is supported by the interpretive language in the preamble to the Benzene NESHAP, which was incorporated by Congress in section 112(f)(2)(B).

We consequently believe that the commenter's bright line approach is not supported by the statute. Indeed, it is likely incorrect as a matter of law.[8] In any event, EPA has concluded that the flexible approach to risk acceptability and ample margin of safety set forth in the Benzene NESHAP is desirable in light of the complex judgments EPA will make under section 112(f). The commenter's rigid approach lacks a basis in sound policy as well.

Comment: Two commenters contended that EPA rejected a more stringent standard because the control technologies were not available at a reasonable cost. The commenters maintained that the more stringent standard would reduce risks to an acceptable level, and that the EPA does not have statutory authority to consider costs. According to one commenter, section 112(f) clearly calls for costs to be considered only in the area of adverse environmental effects.

In contrast, a third commenter stated that EPA should not require any further reductions unless those reductions will produce discernible results stating that EPA justified the proposed additional reductions based on costs, yet noted that the reduction in cancer risk was so

[7] Residual Risk Report to Congress. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. EPA–453/R–99–001. March 1999.

[8] It is true that the Senate version of CAA section 112(f) mandated elimination of lifetime risks of carcinogenic effects greater than 1 in 10 thousand to the individual in the population most exposed to emissions of a carcinogen. (See ''A Legislative History of the Clean Air Act Amendments of 1990,'' pages 7598 and 8518.) However, this version of the legislation was not adopted. The EPA believes that the (rejected) Senate version of section 112(f) shows that Congress was capable of mandating a level of risk reduction had it wished to do so.

small that it was within the noise level of EPA's ability to estimate. The commenter did not believe it was good policy to require additional reductions if EPA cannot be sure they will result in any benefit.

Response: The first two commenters are mistaken regarding the consideration of costs in determining ''ample margin of safety.'' While it is correct that EPA does not consider costs in the first step (the ''acceptability'' determination) of the ample margin of safety determination, costs are a factor which must be considered in the second step of the process (54 FR 38046).[9] We have considered costs here in the authorized and required manner in assessing ample margin of safety after determining if baseline risk (level of risk remaining after imposition of MACT) is acceptable (54 FR 38045; 69 FR 48348–48349).

In establishing an ample margin of safety, we weigh a range of factors, allowing flexibility on what constitutes an ample margin of safety (69 FR 48348). Some of the factors that can be considered are estimates of individual risk, incidence, numbers of exposed persons within various risk ranges, scientific uncertainties, weight of evidence, as well as potential standards' technical feasibility, cost, and economic impact. Balancing the above factors with the ability to achieve meaningful risk reductions is a critical component of the residual risk rulemaking process.

We do not agree with the other commenter that the standards fail to produce discernible results. The emission limits are more stringent than the current MACT standards. The emissions reductions can be achieved at a nominal cost, they are technically feasible, and we estimate that the reductions will ensure that approximately 200,000 fewer people having excess lifetime cancer risks of greater than 1 in a million.

2. Co-Located Sources and Facilitywide Risk

Comment: One commenter said that many coke plants are part of a larger steel production complex; consequently, EPA should have considered the combined risk of all emission sources at the facility, including pushing, quenching, and battery stacks. The commenter also asserted that EPA should have considered the impact on residents near plants that are located in the same area (*e.g.*, East Chicago and Gary, IN) and that the legislative history shows Congress' intent that EPA consider the combined risks of all sources of HAP emissions, regardless of source category, that are co-located. Specifically, Congress intended that the residual risk standards be stringent enough:

> so that when all residual risk standards have been set, the public will be protected with an ample margin of safety from the combined emissions of all sources within a major source.[10]

The commenter disagreed with EPA's statement that delaying a full assessment of risk was a practical necessity because of the lack of information on actual emissions from pushing, quenching, and battery stacks. The commenter argued, essentially, that we are obligated to develop standards for the totality of risks simultaneously.

Another commenter also stated that EPA should consider the facility as a whole and requested stringent controls on each source category to ensure the goals of the residual risk provisions are met in an expeditious manner. The commenter also asked that EPA ensure health protection in cases where there are multiple facilities in close proximity.

Three commenters voiced opposition to consideration of emissions other than those from the specific source category at issue. One commenter indicated that the initial trigger for determining whether a residual risk standard was required at all must be applied only to a particular ''category or subcategory of sources'' (quoting CAA section 112(f)(2)(A)). The commenter argued that the provision in section 112(f)(2)(A) requiring us to develop residual risk standards if risks from the source category exceed a certain level also serves as a limitation in that ''residual risk determinations are to be done on a category or subcategory basis, not on a source or facilitywide basis.'' The commenter concluded that facilitywide risk could not be considered at all when establishing residual risk standards. According to this commenter, the only exception to a source category approach would be a voluntary request for a facilitywide determination so that they could use the most cost-effective set of reductions.

Another commenter maintained that residual risk determinations for facilities as a whole would be acceptable only if EPA were to do so on a source category-by-source category basis. This commenter continued that if EPA were to adopt that approach, then the Agency cannot impose more risk reduction requirements on one source category to compensate for risks posed by another (co-located) source category.

Another commenter argued that statutory language prevents consideration of risks posed by anything but the source category at issue, and further argued that any other approach would be difficult and confusing to implement. The commenter asserted that although EPA can consider facilitywide risk, residual risk standards should not be applied disproportionately to the first of the co-located sources evaluated in the residual risk process.

Three commenters disagreed with EPA's use of Senator Durenburger's statement as the basis for the Agency's ''facilitywide'' interpretation of the statute. One commenter contended that the statement of one Senator cannot overcome the statutory language of section 112(f)(2) or the congressional directive to follow the Benzene NESHAP, particularly when the Senator noted that his remarks were not providing EPA specific new direction. Another commenter added that it was inappropriate to rely on the Senator's statements because the Conference Committee Joint Explanatory Statement suggests that the Senate and House Managers did not agree to much with respect to the Senate bill, and the Conference Report contains no explanation of section 112(f) on which EPA can rely for support.

One commenter stated that a facilitywide approach would be bad policy because it would constrain the ample margin of safety for individual source categories beyond the level intended in the Benzene NESHAP framework. Trying to reconcile aggregated risk from dissimilar sources that may be geographically far apart may be difficult to accomplish and may not identify better opportunities for emission reductions (than would serial analyses for individual source categories). The commenter also stated that Congress directed EPA to establish a list of source categories and was well aware that many plants would have emission units falling into more than one category. Congress also anticipated that standards under section 112(d) and (f) would be staggered over time. The commenter contended that a facilitywide analysis could be too complex, speculative, and costly for other residual risk standards; therefore, EPA cannot and should not mandate facilitywide analyses in standards under section 112(f).

Response: First, we should clarify the scope of the issue. Some discussion of

[9] See also the *Vinyl Chloride* opinion at 824 F.2d 1146.

[10] Floor Statement of Senator Durenberger in ''A Legislative History of the Clean Air Act Amendments of 1990'', vol. 1, page 868 (Senate Debate on Conference Report).

this issue has used loose terminology (*i.e.*, ''facilitywide,'' ''co-located,'' ''background'') as an imprecise shorthand for the various pollutant sources to which an individual could be exposed. In fact, there is a continuum of possible sources of exposure to consider. One could consider, in the initial assessment of residual risk from a source category, exposure from: (1) The individual emission points regulated under the standards being evaluated—here, charging, doors, lids, and offtakes—excluding all other sources, including nearby sources in the same category; (2) emissions from the source category only, but including co-located sources in the same category; (3) emission points at a facility that are necessarily co-located because they are part of an integrated common activity (*e.g.* pushing, quenching, and battery stacks for coke ovens); (4) all emissions at a facility (*i.e.*, a stationary source or group of sources in any source category in a contiguous area under common control); (5) emissions from similar (or all) nearby facilities (''closely-located'' sources) whose emissions affect all or some of the same individuals; or (6) all ambient HAP, regardless of their source (*e.g.*, automobiles, HAP originating from global sources).[11]

After considering the statute and the divergent views of commenters on these topics, EPA agrees with those commenters who stated that the natural reading of section 112(f) is that EPA should evaluate risks posed by the emissions only from the category or subcategory. Section 112(f)(2)(A) instructs EPA to promulgate standards for ''each category or subcategory'' for which it has adopted MACT standards, if such standards are needed in order to provide an ample margin of safety to protect public health. The statutory ''trigger'' provision at the end of section 112(f)(2)(A), which mandates that EPA promulgate residual risk standards when ''cancer risks to the individual most exposed to emissions from a source in the category'' exceed a designated level, clearly is directed exclusively at emissions from the source category alone, and thus supports a reading that the ultimate requirement of the provision likewise applies only to emissions from the source category.[12]

We further agree, that while this is the first determination under section 112(f) since the adoption of the Clean Air Act Amendments of 1990, Congress intended that EPA continue to apply the same test for determining when public health is protected with an ample margin of safety that was in effect before those amendments. Section 112(f)(2)(B) instructs EPA to use the ample margin of safety decision framework adopted in the Benzene NESHAP to make section 112(f) residual risk determinations, and indeed states that:

> [n]othing in subparagraph (A) or in any other provision of this section shall be construed as affecting, or applying to the Administrator's interpretation of this section, as * * * set forth in the **Federal Register** of September 14, 1989.

In the Benzene NESHAP, EPA interpreted and applied the two-step test drawn from the D.C. Circuit's *Vinyl Chloride* opinion. Under that approach, EPA must first determine what level is ''safe'' ''based exclusively upon the Administrator's determination of the risk to health from a particular emission level.'' (*See* 54 FR 38055 (quoting *Nat'l Res. Defense Council, Inc.* v. *EPA*, 824 F.2d 1146 (D.C. Cir. 1987) (en banc)). The Court made clear, however, that ''safe'' does not mean ''risk free.'' *Id.* Rather, the EPA must ''determine what inferences should be drawn from available scientific data and decide what risks are acceptable in the world in which we live.'' *Id.* In the second step under *Vinyl Chloride* and the Benzene NESHAP, once an ''acceptable risk'' level is determined, EPA must decide whether additional reductions are necessary to provide ''an ample margin of safety'' (54 FR 38049). As part of this second decision, EPA may consider the costs of additional reductions, technological feasibility, uncertainties about available information or other relevant factors. *Id.*

After examining the statutory scheme, the Benzene NESHAP, and sound policy concerns, EPA has concluded that, in its assessment of ''acceptable risk'' for purposes of section 112(f), the agency will only consider the risk from emissions from that source category. This was the approach in the Benzene NESHAP, wherein EPA limited consideration of acceptability of risk to the specific sources under consideration (coke byproduct recovery plants, benzene storage vessels, benzene equipment leaks, ethylbenzene/styrene process vents, and maleic anhydride process vents) rather than to the accumulation of these and other sources of benzene emissions that may occur at an entire facility.[13] See, *e.g.*, 54 FR 38061 (stating in regard to consideration of natural background levels of a pollutant that ''considering other sources of risk from benzene exposure and determining the acceptable risk level for all exposures to benzene, EPA considers this inappropriate because only the risks associated with the emissions under consideration are relevant to the regulation being established and, consequently, the decision being made.'') The Agency also rejected approaches that would have mandated consideration of background levels of benzene in assessing acceptability of risk. [14]

EPA has concluded that the sound policy embodied in the Benzene NESHAP remains the approach that EPA should follow in determinations under section 112(f). At the first step, when determining ''acceptable risk,'' EPA will consider public health risks that result from emissions from the source category only. Not only is this interpretation supported by the text of the statute and prior regulatory practice, but we are impressed and daunted at the practical problems of implementing a compulsory facilitywide examination. For example, as commenters pointed out, in future rules, the myriad combinations of source categories present at different facilities could create situations where nationwide consideration of residual risk becomes a practical impossibility because every facility would present a different fact pattern of source categories. Yet section 112(f) contemplates national determinations, not case-by-case evaluations and standards.

[11] Of course, in all of these cases, EPA would limit consideration to HAP emissions that are either the same as those emitted by the sources under evaluation or that have the same health effect or affect the same target organ.

[12] Further, section 112(c)(9) authorizes EPA to delist a category or subcategory on the basis of specified risk criteria. This section does not require EPA to look beyond the relevant category or subcategory in making delisting decisions. It would be inconsistent for Congress to allow categories or subcategories to be delisted entirely from the section 112 regulatory program using a category specific analysis, yet require EPA to look beyond the same specific category when making similar risk assessments under section 112(f).

[13] EPA will consider, consistent with the Benzene NESHAP decision, whether co-location of entities within the same source category ''significantly influences the magnitude of the MIR or other risk levels'' (54 FR 38051). In this rulemaking, EPA has concluded that the health risks from the emissions at issue in this rulemaking are not affected (let alone significantly affected) by co-location with other entities in the same source category.

[14] EPA concluded that ''comparison of acceptable risk should not be associated with levels in polluted urban air'' (54 FR 38061). Background levels of certain HAPs can be relatively high, perhaps even above a level that might be considered ''safe.'' These background levels (including natural background) are not barred from EPA's analysis, but EPA will consider them along with other factors, such as cost and technical feasibility, in the second step of its 112(f) analysis. To decide otherwise, EPA would have to conclude—inconsistent with the Benzene NESHAP and sound policy—that 112(f) requires EPA to shut down any source that emits a HAP in an area with high background pollution, even if the emissions from that source are extremely small and do not appreciably affect overall risk.

At proposal, EPA cited a portion of a floor statement by Senator Durenberger as support for the position that EPA must assess the risk from an entire facility. EPA agrees with the commenters who stated that this statement is not sufficient evidence of Congressional intent to justify a different response than that adopted in the Benzene NESHAP, especially when, later in the same statement, the Senator states that section 112(f) is intended to be a ''return to current law'' under the Benzene NESHAP. (See Legislative History, Vol. 1 at 875–76.) As noted above, EPA did not adopt standards covering entire facilities in the Benzene NESHAP.

This said, EPA disagrees that section 112(f) precludes EPA from considering emissions other than those from the source category or subcategory entirely. EPA must still determine whether additional reductions should be required to protect public health with ''an ample margin of safety.'' EPA believes one of the ''other relevant factors'' that may be considered in this second step is co-location of other emission sources that augment the identified risks from the source category. The Benzene NESHAP does not explicitly identify this as a relevant factor under step two, but the decision does acknowledge that ''multiple exposures to chemicals are important to understand and consider in the EPA's overall implementation of its public health mandates' despite the fact that EPA has concluded that these risks should not be ''routinely evaluated and considered in selecting'' the level of acceptable risk (the first step of the Benzene analysis) (54 FR 38059).

The decision today is an example of a situation in which EPA has determined such a relevant factor merits evaluation. Each of the facilities subject to today's rulemaking is also subject to MACT emission standards on coke oven emissions from pushing, quenching, and battery stacks. These sources are *necessarily* co-located—they are integral parts of the same industrial activity. In this instance, EPA has the authority, in establishing ''an ample margin of safety,'' to impose greater reductions on a particular source category when the agency concludes that several of these co-located sources categories have elevated the overall public health risk to unacceptable levels.[15] While this evaluation could be performed during the development of an individual residual risk standard for any particular source category that is part of a larger facility with multiple source categories, such an analysis would necessarily require sufficient data regarding the total facility emissions and the costs and risk impacts of reducing those emissions. Such information may conceivably be available when EPA does the first residual risk rule applicable to a facility, but it is much more likely that an early evaluation of cross-category risks will be inconclusive due to a lack of complete information regarding other emission points. (In this rule, for example, EPA does not yet have an accurate quantification of pushing and quenching battery emissions reflecting these sources' operations under MACT standards; such information is needed to reasonably assess risks, costs, and further technologically feasible emission reductions.) EPA expects to develop better information about what cost-effective emission and risk reduction opportunities are available as more source categories are assessed. EPA believes, in the future, it may be able to identify potential emission reduction trade-offs between co-located source categories that result in more efficient risk reductions for less economic cost at a facility.

3. Actual Versus Allowable Emission Rates

We explained at proposal that we modeled emissions at the rates allowed by the 1993 national emission standards because they represent the source's potential emissions and risks and is, therefore, consistent with the language in CAA section 112(f)(2).

Comment: We received some comments that agreed with the use of allowable rather than actual emission rates while other comments stated that we should use actual emissions. According to one commenter, Congress meant for EPA to make realistic estimates of residual risk. In support, the commenter pointed to the language of section 112(f)(2) which refers to a different measure of risk (*i.e.*, risk to the ''individual most exposed to emissions from a source'' rather than ''maximum exposed individual'' or ''maximum individual risk'' used in the Benzene NESHAP) and associated passages in the legislative history. The commenter stated that EPA has data on actual emissions and should use this information as the basis for the risk assessment for coke ovens. Another commenter agreed with the decision to assume that sources are complying with the 1993 national emission standards when estimating emissions. The commenter also agreed with efforts to evaluate actual versus ''worst case'' potential emissions when estimating population risks and encouraged appropriate adjustments in future risk assessments. Another commenter stated that the use of maximum allowable emissions is particularly inappropriate for industrial source categories with batch operations because they consistently operate at levels well below the allowable rate.

One commenter stated that EPA should not assume perfect compliance with allowable emission limits since several of these facilities are out of compliance. The commenter believed that we must account for noncompliance in the emission estimates.

Response: EPA believes it may evaluate potential risk based on consideration of both actual and allowable emissions. This approach is both reasonable and consistent with the flexibility inherent in the Benzene NESHAP framework for assessing ample margin of safety. As a general matter, allowable emissions are the maximum level sources could actually emit and still comply with the national emission standards, so modeling this level of emissions is inherently reasonable for evaluating potential risks associated with current standards. As discussed in other sections of this preamble, coke oven battery sources are consistently controlling emissions below the level allowed by the 1993 national emission standards, which results in a 30 percent reduction in the estimated MIR.

It is also reasonable that we consider actual emissions, when available, as a factor in both steps of the determination (*i.e.*, determining both risk acceptability and ample margin of safety). See 54 FR 38047, 38050–38051, 38053 (we acknowledge a probable overestimate of emission levels in determining that risk and overall incidence is probably less than the maximum estimated levels). For the final rule amendments adopted today, years of monitoring data show that actual emissions have been consistently lower than allowable levels (69 FR 48346–48347). Moreover, there is a sound empirical basis for coke oven emissions to be lower than theoretically allowable levels. To allow for process variability, sources typically strive to perform better than required by emission standards so that the emission

[15] This is not to say that the EPA may impose significant reductions across an entire source category to alleviate health risks posed by co-location at a subset of facilities. In these circumstances, EPA believes it should further parse its emissions standards so as to impose greater reductions only on those facilities with significant co-location of other emissions. Put another way, EPA may permissibly develop section 112(f) standards that could result in different controls for co-located source categories at a facility than for the same source category which is not co-located.

increases which occur on individual days due to process variability remain below emission standards. Failure to consider these data in risk estimates would unrealistically inflate risk levels.

It is incorrect that a large number of these coke batteries are out of compliance. The batteries are inspected every day to determine compliance with the emission limits for doors, lids, offtakes and charging. We have compiled the results of these compliance inspections, and the details are in the rulemaking docket. The inspection results show that the coke batteries are operating consistently below the established emission limits and have shown essentially continuous compliance.

4. Exposure Duration

Comment: Two commenters disagreed with the use of a 24-hour per day exposure over a 70-year lifetime to estimate individual and population cancer risks for refined risk assessments. According to one commenter, this exposure assumption is inconsistent with the recommendations by the National Research Council and the Commission on Risk Assessment and Risk Management. In their Reports to Congress, these organizations support development of distributional approaches to exposure characterization based on knowledge of the characteristics of a population's variability. This commenter asked EPA to develop a refined exposure methodology that incorporates information available on population residency times that will more accurately reflect population risk estimates. The development of this exposure methodology should also include a probabilistic analysis of estimated exposures. The other commenter stated that the use of such an unrealistic assumption makes the results overly conservative and will lead to additional and unnecessarily stringent standards more frequently than necessary.

Response: We agree that our assumption that people may be present at their homes for 24 hours per day over a 70-year lifetime represents a scenario that likely overestimates the actual exposures received by people living near the facilities. Most people have daily activities that take them to areas where exposure concentrations are different and move to new residences periodically. Both of these behaviors will tend to lower lifetime exposures and, therefore, risk. The most significant risk reductions would occur for the group of people who are the most exposed. For these reasons, we are currently developing a methodology that will allow us to consider a variety of parameters (*e.g.*, residency time, socio-economic conditions, age distribution, demographics, size of the census block) that could affect exposure and risk to individuals and populations that live in the vicinity of facilities. Other factors (*e.g.*, emigration out of and immigration into the ''exposure area,'' social factors that affect population mobility, and census block size) may also influence the mobility of populations and, therefore, affect estimates of exposure and risk. As part of this effort, we are also investigating whether similar probabilistic techniques can be applied to the MIR to develop meaningful alternative metrics of individual risk. While this methodology is currently under development, we did not have sufficient information to apply any of these factors to these coke oven facilities.

Finally, regarding recommendations of the Commission on Risk Assessment and Risk Management, we note that our overall approach is consistent with some of those recommendations. For example, the Risk Commission recommended that ''exposure assessments should not be based on a hypothetical MEI * * * should rely on more representative estimates or a maximally exposed actual person* * *.'' Our approach was based on identifying the maximum concentration where the census data identified people as actually living, and we assumed, as discussed above, that exposure of this individual was for 70 years starting at birth. Where we varied from the Commission's recommendation in this area was in assuming a 70-year exposure duration for the population as well. As just noted, we are developing a methodology that will allow us to look at the exposure variability that might be seen in the exposed populations. See the ''Residual Risk Report to Congress'' (at pages 128–130) summarizing similarity in approaches.

5. Hazard Index

Comment: Five commenters disagreed with use of the hazard index (HI) of 1 as the safe or acceptable level for noncancer health effects. One commenter stated that the HI level of 1 should be the ample margin of safety level because the values which form the basis for calculating HI already contain sufficient layers of safety to represent the ample margin of safety. The commenter contended that the reference concentration (RfC) or reference dose (RfD) represents the most stringent ample margin of safety level EPA should adopt.

Three commenters recommended that EPA avoid establishing any bright line for a safe or acceptable level for non-carcinogens. One of these commenters explained that the HI of 1 would define both the acceptable risk level and the ample margin of safety level in one step, which is inconsistent with the two-step Benzene NESHAP framework. This commenter argued that an HI of 1 is too conservative because ''the ample margin of safety would always be set at or below an HI of 1.0, which would have an effect equivalent to a cancer level of 10^{-4} within the Benzene framework.'' The Commission on Risk Assessment and Risk Management's report selected a threshold HI of 10 because the RfC on which the HI is based already includes many uncertainty factors that should not be compounded in the ample margin of safety decision.

Another commenter stated that EPA needs to clarify that the case-by-case flexibility in the Benzene NESHAP framework also applies when interpreting hazard quotients (HQ) and HI. Although the proposal preamble did not identify a bright line, EPA's risk assessment document stated that an HI of 1 for each facility should ordinarily represent the safe or acceptable level, and that the ample margin of safety level may be lower or equal to the acceptable level, but can never be higher. The commenter objected because EPA was talking about an HI for a facilitywide analysis (rather than a specific source category) and because a rigid adherence to an HI of 1 for determining acceptable risk is unwarranted. The EPA should reserve flexibility in interpreting and applying HI and HQ acceptability, even in the screening stage. The flexibility is needed because of the variability in uncertainty factors, quality and consistency of data content, and other underlying information and assumptions. The commenter provided additional specific observations:

- In some cases, an HI or HQ can represent negligible or zero risk. There is no means to translate an HI or HQ into a probability of an individual incurring the effect (as is done for carcinogen effects).
- The EPA should do the initial screening using a target organ specific HI and should not aggregate across target organs and HAP for either the initial screening or refined assessment. No health-based conclusion can be reached from aggregating across different organs. An HI ''roll up'' for multiple chemicals' HQ must be predicated on target organ end points that are the same and a common mechanism or mode of action.

• Neither a range of 0.2 to 0.8 for HI nor a conservative default of 0.2 is permissible under the CAA. The statute only refers to the emissions and risk posed by a source category.

Response: Five commenters pointed out that a statement in the risk assessment document indicated that an HI of 1 is the safe or acceptable level. Our statement in the risk assessment document was incorrect and has been revised. We did not use an HI of 1 as the acceptable level in our analysis. In the proposal preamble, we explained that ''the maximum estimated target organ specific HI for the emissions of HAP that may cause effects other than cancer from all emission points at the facility is 0.4,'' and that ''these emissions do not exceed a level which is adequate to protect public health with an ample margin of safety'' (69 FR 48350). Furthermore, we disagree that the ample margin of safety should never be more stringent (or less stringent) than the RfC (essentially an HQ or HI of 1) since, like the cancer framework, we do not consider an HI of 1 to be a bright line. We will evaluate the magnitude of the HI on a case-by-case basis.

We disagree that an HI of 1 is equivalent to a cancer risk of 1 in 10,000 as claimed by one commenter. As stated above, statements in the risk document identifying an HI of 1 as a safe or acceptable level are not correct and have been revised. We also disagree with the commenter who felt that the HI of 1 was too health protective because it did not consider different target organs. As used in the proposal and as intended for use in future residual risk assessments, the HI limit does reflect target organ specificity.

The Commission on Risk Assessment and Risk Management's report does not say that an HI of 10 should be used as a level representing an ample margin of safety. The HI of 10 is used in that report in the context of screening (health-protective) risk assessments for residual risk. For sources with HI greater than 10, the Commission suggested an additional detailed risk assessment be performed. If the HI is still greater than 1, the facility is supposed to ''examine options/choose actions to reduce risk.'' For sources with HI between 1 and 10, facilities are supposed to voluntarily reduce emissions to achieve a lower risk category. The Commission recommended that if an HI is less than 1, no further action is required.

We also note that most of these comments deal with conceptual issues not relevant to this rulemaking. We have not needed to make definitive determinations regarding appropriateness of any HI level because we have determined that exposures to emissions of threshold HAP from coke oven batteries (all emission points) are well within acceptable levels and require no further control to achieve an ample margin of safety.

B. Risk Comments Specific to Coke Ovens

1. Acceptable Risk

Comment: Two commenters contended that EPA considered factors that might lessen the concern for risks, but did not give equal weight to factors that increase concern. For example, the EPA's analysis ignored HAP for which the Agency lacks cancer potency values.

Response: We disagree with the commenters' concern that our analysis ignored HAP for which we lack cancer potency values. For those situations when cancer potency values are not in the Integrated Risk Information System (IRIS), we have established a prioritization process for accessing health assessment information from outside EPA (as described in our ''Residual Risk Report to Congress'' on pages 56 through 58). This hierarchy includes dose-response values from EPA as well as other agencies that conduct scientific peer reviews such as the California Environmental Protection Agency Air Resources Board (CARB) and the Agency for Toxic Substances and Disease Registry (ATSDR), which is part of the U.S. Department of Health and Human Services. These non-EPA values incorporate the best available science, are conceptually consistent with EPA's risk assessment guidelines, and have undergone a level of scientific peer review. Far from being ignored, many of the health assessment values used in the assessment were derived from non-EPA sources (see Table B–1 in the risk assessment document).

Comment: The risk is underestimated because EPA did not consider the risk from all carcinogenic HAP emitted from the facility.

Response: As stated in the risk assessment document, inhalation cancer risk from the sources covered by the 1993 national emission standards was estimated using the HAP ''coke oven emissions,'' for which we have estimated a cancer URE. See CAA section 112(f)(6) which specifically acknowledges the possibility of considering risks of coke oven emissions as a whole; see also ''Residual Risk Report to Congress'' at page 108, noting that we may of necessity consider risks posed by the ''unique chemical substances'' enumerated in section 112(f)(6), rather than attempting to ascertain every element of these complex mixtures and ascertaining a risk associated with each component. It is not necessary to consider separately the presence of each constituent of the mixture, coke oven emissions, which are also known to be carcinogens since their contribution to cancer risk is subsumed into the risk from the mixture. We considered the risk due to individual constituents when assessing non-inhalation and noncancer risks, when assessing risk from emission points where the composition of the mixture may be different (*e.g.*, after the pushing emission control device), or when a screening level assessment was done. As described in the risk assessment document, we based our selection of HAP to be included in a screening level assessment on the availability of information on toxicity and emissions. Additional discussion of the HAP we considered is provided later in this preamble. The issue of HAP from co-located sources and facilitywide risk is discussed elsewhere in this preamble.

Comment: One commenter stated that we should not accept a risk greater than 1 in 10,000 because of the weight of evidence that coke oven emissions, arsenic, and benzene are ''known'' human carcinogens. In support, the commenter cited the Benzene NESHAP * * * ''particular attention will also be accorded to the weight of evidence presented in the risk assessment of potential human carcinogenicity.''

Response: While the commenter is correct that particular attention will be accorded to the weight of evidence presented in the risk assessment of potential human carcinogenicity, the weight of evidence is not the only health measure that must be considered. As stated in the Benzene NESHAP * * * ''no specific factor in isolation could be identified as defining acceptability under all circumstances'' (54 FR 38044). Therefore, the acceptability of risk depends on consideration of a variety of factors and conditions. This assessment considered all of those factors listed in the Benzene NESHAP.

2. Ample Margin of Safety

In the proposed rule, we said that even though emissions from pushing, quenching, and battery stacks are part of a different source category (because Congress singled out other emission points in section 112(d)(8) and 112(i)(8)), they ''are an integral part of the same facilities covered by the national emission standards for charging, door leaks, and topside leaks (they not only are part of the same process but emit the same HAP)'' and

could permissibly be considered in setting the emission standard today (69 FR 48340). Table 1 of the proposed rule amendments (69 FR 48346) provided estimates of the risks posed by emissions from all components of the coking process at the four facilities (*i.e.* door, lid, offtake, charging, pushing, quenching, battery stack, and by-product plant emissions).

As noted previously, EPA has not performed a complete residual risk determination for these other source categories, EPA has investigated the MIR and the population risk that result not only from the emissions being addressed by today's rulemaking but also from the other coke oven emission points located at the MACT track facilities. EPA's preliminary analysis has determined that emissions from the remaining coke oven facility emission points (pushing, quenching, battery stacks) do not cause risks appreciably greater in significance that those for the source category for which we are developing standards. Our risk estimates for pushing, quenching, and battery stacks are contained in the risk assessment document.

EPA has concluded that delaying any further reduction is unlikely to result in disproportionate controls on other parts of a coke plant should EPA ultimately determine that further controls are necessary to provide an ample margin of safety. We therefore have determined that current information does not justify the imposition of more stringent controls to provide an ample margin of safety.

Comment: One commenter suggested that EPA should also consider, in addition to the source category that is necessarily linked to the source category at issue, the risks from emissions from co-located iron and steel plants located within the same facility boundaries as the coking operations. Two of the four coke oven facilities affected by today's final rule amendments (AK Steel in Ashland, KY; and AK Steel in Middletown, OH) have integrated iron and steel plants co-located with their coking operations within their facility boundaries and under their control.

Response: EPA does not believe it is appropriate to impose a restriction on all sources within a source category (here, the coke oven emission points at issue in this rule) based on the fact that half of the sources are co-located with a distinct source. The risk to public health from integrated iron and steel plants—sources which are not necessarily co-located with coke ovens—should be addressed in the residual risk determination for that source category. Nevertheless, EPA did assess the impact that emissions from co-located integrated iron and steel plants have on their facilitywide risk estimates. The integrated iron and steel plants are located fairly far from the coking operations at the two facilities where these two source categories are present at a common site. At Middletown, the iron and steel plant is located approximately 0.5 miles northeast of the coking operations. At Ashland, the iron and steel plant is located approximately 0.9 miles south of the coking operations. EPA's screening analysis indicates that the contribution of iron and steel emissions to the MIR posed by the coke oven sources is negligible.[16] The MIR due to coking operations occurs to the west of the coking operation at the Middletown facility, and to the northwest of the coking operation at the Ashland facility. At both facilities the MIR is influenced by the proximity of the nearby population rather than by the primary wind direction, which is from the west/southwest. Stated simply, the iron and steel plants are located in such a way as to have only a very limited effect on those individuals who are most exposed to emissions from the coking operations. In fact, a reasonable rough estimate of the potential effect of integrated iron and steel plants on the MIR is less than 2 percent for both facilities.

Comment: Three commenters contended that the proposed amendments do not meet the requirements of section 112(f) or congressional intent because they do not protect the public health with an ample margin of safety. The proposed amendments would reduce risk from charging, doors, and topside leaks by only a small amount (from 200 in a million to 180 in a million) and leave 200,000 people still exposed to risks greater than 1 in a million. One commenter said these risk estimates are ''in tension'' with EPA's general goals to protect the greatest number of people possible to a risk no higher than 1 in a million and to limit the risk to a person living near a plant to a risk no higher than 1 in 10,000.

Response: As noted earlier, we do not consider the 1 in a million MIR level as a ''bright line'' mandated level of protection for establishing residual risk standards. The final rule amendments will reduce the excess lifetime cancer risks for an estimated additional 200,000 people to less than 1 in a million, a goal that is not ''in tension'' with our general goal of protecting the greatest number of people possible to risks no higher than 1 in a million. In determining the ample margin of safety (*i.e.*, the level of the standard), health risk is one factor that we must consider, along with other factors such as cost and technological feasibility. Balancing these and other factors with the ability to achieve meaningful risk reduction benefits is a critical component of the residual risk rulemaking process. We considered reducing risks further but concluded that the technology required would be cost prohibitive for this industry and therefore undesirable.

3. Scope of the Risk Analysis

Comment: The EPA's proposal did not contain any information on if or how the agency assessed the risks from acute exposure to coke oven emissions or how the proposed standards would protect public health with an ample margin of safety from such risks. The EPA ignored the recommendation from one peer reviewer on the need to justify no consideration of the health effects from acute exposure.

Response: Risks from acute exposure are of greatest concern when excess emissions occur and cause a peak or spike in ambient concentrations of a pollutant. Coking is a continuous operation (*i.e.*, the coke oven battery is operated continuously and is seldom shut down, other than for a major rebuild or extensive repairs, because the cooling during shutdown could damage oven walls). The ovens in a battery are in various stages of operation such that any emission fluctuations would be caught in the highly buoyant plume which rises continually above the batteries. From a toxicological perspective, references values derived for acute exposure assessment are higher concentrations than chronic reference values. Consequently, for situations, such as this, where there are not short periods of higher exposure levels, the chronic assessment will be controlling. In this assessment, no significant chronic non-cancer effects were identified, therefore, no acute effects would be expected.

Comment: The EPA must assess exposure through eating food in which toxics have accumulated or bioaccumulated, drinking contaminated water, and dermal exposure through contaminated soil. And, while EPA considered fish consumption at recreational levels, it did not consider

[16] Even if a screening analysis suggested an important contribution from these sources, EPA would still need to consider more detailed assessments of sources and facilities with the highest risks. For example, in this screening analysis, EPA has treated iron and steel emissions as emanating from a single point (at a specific stack height). In a more detailed analysis, EPA would represent the actual plant configuration reflecting the disparate location of emission points and stack heights.

risks to subsistence fishing population, including those on the Great Lakes and poor people in urban areas. Mercury, dioxins, lead, and PAH are examples of other toxics released from coke ovens whose primary risks are from non-inhalation pathways. The EPA must reassess the risk and include dietary pathways from all of the relevant pollutants. Another commenter recommended that EPA improve its multipathway risk assessment methods.

The commenter stated that EPA admitted that its generic environmental analysis was not intended to be used to predict specific types of effects to individuals, species, populations, or communities or to the structure and function of the ecosystem. According to one commenter, EPA's failure to consider any impact on any individual species contravenes the CAA. Another commenter recommended that EPA develop criteria for refined ecological assessments that meet the statutory specifications.

Response: The multipathway assessment used for this analysis was based on the multipathway assessment initially used for a secondary lead smelters case study and was refined through the use of EPA's most current multipathway guidance. These include, for example, EPA's Office of Solid Waste's peer-reviewed ''Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities'' [17] which provided overall guidance and chemical-specific values for bioaccumulative and persistent HAP.

The HAP included in the analysis were selected using the procedures described in the risk assessment document and parallels the selection methodology described in our recently released ''Air Toxics Risk Assessment Reference Library.'' [18] Additionally, we only included the HAP for which we had sufficient information to suggest that the HAP were emitted from the sources which are the focus of these final rule amendments and for which emissions could be estimated. The air toxics included in this assessment were a group of PAH and lead. The final rule amendments will reduce the amount of these emissions from coke ovens. Mercury would ordinarily be included in the list of persistent, bioaccumulative, and toxic (PBT) HAP to be assessed, but as discussed in the risk assessment document and in section III.B.4 of this preamble, mercury emissions were very low for this source category, primarily because volatile compounds like mercury are captured and removed in the by-product recovery plant.

Multiple routes of exposure were assessed in the multipathway assessment including both inhalation and ingestion of contaminated food, soil, and drinking water. A mixture of best-estimate central tendency and health-protective assumptions were used in order to be health-protective for both adults and children, but also to estimate risks that were not beyond the level of plausibility. This assessment uses a ''farmer/recreational fisher'' scenario. In the scenario, the farmer/recreational fisher was located at the point of the maximum impact to agricultural land near each of the facilities, and our assessment included the consumption of all types of home-produced fruit, vegetables, beef, pork, and dairy products, as well as locally-caught fish. The pathways included in this assessment were inhalation, soil ingestion, produce ingestion, fish ingestion, drinking water ingestion, and breast milk ingestion for infants. The farmer was assumed to consume locally-caught fish at the rate of a recreational fisher, but both central-tendency and high-end consumption rates based on values from the ''Exposure Factors Handbook'' were included in the analysis to increase confidence that individuals that may have higher consumption would be protected. Risks were estimated using the health-protective assumption of lifetime continuous exposures.

The screening-level ecological risk assessment used for this analysis used the same methods as the secondary lead smelters case study to estimate HAP media concentrations and to develop protective screening-level ecological toxicological dose-response values. This screening-level assessment was designed to identify and further evaluate HAP that pose a potential ecological risk and to remove from the analysis those HAP that did not pose such risks. In order to feel confident that this assessment considered threatened and endangered species, this analysis intentionally used assumptions that, overall, tend to overestimate risks. These assumptions include the following:

Choice of ecologic receptor. This assessment evaluated the species from a broader list of species (sediment dwellers, including aquatic sediment dwellers), soil dwellers, aquatic life, air and soil dwelling plants, various representative types of mammals; see risk assessment document, Table 3–8) that are considered widely distributed and provide a representative range of body sizes and diets. In cases where multiple species from which to choose were available for a particular exposure scenario (*e.g.*, a terrestrial herbivore), EPA evaluated the species with the lowest benchmark (*i.e.*, the most sensitive species) for this assessment.

Choice of risk metric. All species in the assessment are evaluated against the No Observable Adverse Effect Level (NOAEL). As the name indicates, this is a level of exposure below which one would not expect to see any adverse effects. Since relatively few animal or plant studies have determined these safe levels of exposure over an entire lifetime or several generations, a NOAEL for chronic exposures to a particular chemical must be estimated from toxicity studies of the same chemical conducted on a different species of wildlife or on laboratory animals. In these cases, to ensure that species survival is accounted for and to be more health-protective, whenever possible we used the NOAEL from studies in which more sensitive endpoints such as reproductive and developmental toxicity and reduced survival were the outcome as opposed to direct mortality. To evaluate potential risk to aquatic life, we used as a comparison benchmark EPA's Water Quality Criteria (adopted pursuant to section 304(a) of the Clean Water Act) which are used by States (and authorized Tribes) in adopting water quality standards for the protection of human health, aquatic life, and aquatic-dependent wildlife.

Further protective assumptions related to exposure. We made the additional protective assumption that terrestrial and aquatic species reside and therefore forage and drink exclusively in the area where the maximum HAP concentration is estimated. We further assumed that any HAP to which they are exposed is 100 percent bioavailable.

Protective assumptions related to emission levels. The ambient concentrations estimated for each terrestrial wildlife exposure scenario were derived from the modeling done for the human health assessment, and so contains the same protective assumption that emissions are constantly at the level allowed under the 1993 national emission standards. We know that actual emissions are less (69 FR 48496–48497) and, therefore, exposure and risk would also be less.

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[17] Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Vol. 1 (peer review draft), U.S. Environmental Protection Agency, Office of Solic Waste and Emergency Response. EPA 530–D–98–001A. 1998.

[18] Air Toxics Risk Assessment Reference Library. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Vol. I: Technical Resource Manual, EPA 453–K–04–001A. Vol. II: Facility-Specific Assessment. EPA 453–K–04–001B. April 2004.

We also assumed that the emissions from the coke facility with the highest emissions were representative of the emissions that might be anticipated from the other coke facilities subject to these final rule amendments.

Even using these highly protective assumptions, modeled concentrations remain under the NOAEL for each species, in most instances by many orders of magnitude. For risks to aquatic life, modeled risks for each HAP again remained an order of magnitude lower than the Water Quality Criteria levels.

We recognize that there are data limitations for these analyses that indicate a need for further refinement and development of multipathway and ecological risk assessment tools. The multipathway and ecological reference methodology described in the ''Air Toxics Risk Assessment Reference Library'' (see footnote 18) will be revised. While these more complex tools were not needed in the coke oven residual risk assessment (because no screening-level ecological effects were seen even when the assessment included many protective assumptions), they are important and may play a larger role in future residual risk assessments, and we will be developing future guidance.

Comment: One commenter said that because HAP emitted by coke oven batteries is persistent and bioaccumulative, EPA was obliged to consult with the Fish and Wildlife Service as required by the Endangered Species Act. The commenter further stated that such consultation should consider information in EPA's Great Waters Report,[19] issued pursuant to CAA section 112(m), that species are affected by deposition of HAP emitted by sources located in areas near the Great Lakes.

Response: Given the many protective assumptions of this assessment, we remain confident that if an individual member of a species is protected, as shown in our assessment, then the population as a whole would be protected. EPA has not identified any evidence of effect on critical habitat, given that our analysis shows no adverse effect on the terrestrial or aquatic life evaluated. Since our results showed no screening-level ecological effects, we do not believe that there is an effect on threatened or endangered species or on their critical habitat within the meaning of 50 CFR 402.14(a). Because of these results, EPA concluded a consultation with the Fish and Wildlife Service is not necessary. In this regard, we again reviewed the Great Waters Report mentioned in the public comment. There is no mention of threatened or endangered species in our ''Great Waters Reports to Congress.'' The risk assessment conducted in this rulemaking is consistent with the recommendations in the report to conduct assessments of the potential impacts of the emissions and deposition of PBT HAP on ecological systems, including water bodies.

Comment: One commenter disagreed that there is no information that would allow EPA to assess the risk to children from coke oven emissions. All of the individual constituents in coke oven emissions have been studied in children, and children have been found to be more susceptible than adults to each of the toxic components. The commenter provided extensive information on why children's airways are more susceptible to airborne carcinogens and provided health effects information on PM, PAH, and mercury. The commenter stated that an adequate risk assessment must include the acute and chronic respiratory effects of PM; cancer, reproductive, and developmental effects of PAH; and the neurotoxic effects of mercury on children.

Response: The commenter is mistaken; we did not state in the proposal preamble or risk assessment document that we had no information to assess the risk to children. We acknowledge that population subgroups, including children, may have the potential for risk greater than the general population due to greater body burden and/or greater susceptibility to the toxicant. Our risk assessment accounts for these greater body burdens. For certain exposures (*e.g.*, lead), children were explicitly assessed, while in other cases (*e.g.*, inhalation pathway) lifetime (rather than simply childhood) exposure was assumed, which would tend to yield higher estimates of risks.

In the ingestion pathway assessment, risks to children from lead, a pollutant with known hazard to children from the ingestion pathway, were explicitly assessed and presented. As part of the multipathway screening analysis (see appendix A of the risk assessment document), blood lead concentrations were predicted for estimates of cumulative lead exposure of children aged less than or equal to 7 years old. As described in the risk assessment document, the predicted blood lead concentrations all fell below the Center for Disease Control level of 10 micrograms per deciliter (µg/dL), an indicator of elevated blood concentration. The maximum level estimated was 0.1 µg/dL.

While risks to children from other pollutants were not separately assessed for the ingestion pathway (only central tendency and high end adult values were estimated), we do not consider the ingestion pathway to be the driver or highest risk pathway. The amount by which exposure factors generally increase the resultant cancer risk of children (less than 18 years of age) over a similar exposure duration for adults is less than a factor of three. Review of the ingestion pathway cancer risk estimates for the adult exposures indicates that ingestion pathway cancer risk estimates for a similar duration of children's exposure would still fall below the inhalation pathway cancer risks. Given that the highest cumulative HI for the adult exposures was on the order of 0.001, a separate estimate for children's ingestion exposure while expected to be a slightly higher value, would still fall well below an HI of concern. Consequently, the major focus for the risk assessment was placed on the inhalation analysis.

In the inhalation pathway assessment, the exposure assessment described the maximum exposure of residents near coke oven emissions. The exposed population was presumed to be exposed to airborne concentrations at their residence continuously 24 hours per day for a full lifetime. No greater inhalation exposure to neighboring residents would be feasible.

With regard to children's potentially greater susceptibility to the toxicants present in coke oven emissions, the assessment relied on Agency dose-response values which have been developed for all subgroups of the general population, including children. For example, a recent review [20] of the chronic reference value process concluded that the Agency's RfC and RfD derivation processes adequately considered potential susceptibility of different subgroups with specific consideration of children, such that the resultant RfC/RfD values pertain to the full human population ''including sensitive subgroups,'' a phrase which is inclusive of childhood.

With regard to cancer dose-response values, our revised cancer guidelines and new supplemental guidance recommend applying default adjustment factors to account for exposures occurring during early-life exposure to

[19] Deposition of Air Pollutants to the Great Waters: Third Report to Congress. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. EPA–453/R–00–005. June 2000.

[20] A Review of the Reference Dose and Reference Concentration Process. U.S. Environmental Protection Agency. Risk Assessment Forum. EPA/630/P–02/002F. December 2002.

those chemicals thought to cause cancer via a mutagenic mode of action. The effect of these guidelines on the risk assessment is discussed in detail in section I of this preamble.

In summary, our dose-response values have been developed via methodology that is intended to provide either a plausible upper-bound potency factor or an exposure with which there is likely no appreciable risk of adverse effects during a lifetime considering all population subgroups, including children.

Comment: One commenter asked EPA to faithfully apply the standards for ''influential scientific risk assessment information'' to the risk assessments that underlie residual risk rules. The commenter also asked EPA to implement and fully adhere to the Agency's Information Quality Guidelines so that the data and analysis will be sound and well represented to decision makers and the public. The commenter stated that EPA should aggressively pursue reform of its risk assessment practices in response to the advice of its key advisors, should take steps to eliminate conservative assumptions embedded in its risk estimation procedures, and should begin work on a recommended alternative approach that will produce more accurate and realistic estimates.

Response: In compliance with the Agency's Information Quality Guidelines, specifically as they apply to influential scientific risk assessments, we have taken significant steps to ensure that the substance of the information in our risk assessments supporting the coke ovens residual risk rule is accurate, reliable, and unbiased. To this end, we have used the best available science and supporting studies as well as data collected by the best available methods. For example, many of the components of our risk assessments (air quality and exposure models, toxicity values, methods for estimating emissions, etc.) have undergone independent scientific peer review on their own or as applied in specific case studies. In addition, we have subjected the final report on the coke ovens risk assessments to a peer review by experts external to the Agency through a letter review process administered by a third party. Through this peer review, we have endeavored to ensure that the presentation of information on human health and environmental risks is comprehensive, informative, and understandable. The final risk assessment document, revised per the peer review, as well as the peer reviewers' comments and our responses to them, have been made available to the public in the docket for this rulemaking.

Comment: Two commenters stated that the risk assessment was inconsistent with the Agency's Information Quality Guidelines because EPA did not use newer, peer-reviewed health effects data (*i.e.*, using the 1984 IRIS value for coke oven emissions instead of newer, peer-reviewed health effects data submitted by Sciences International).

Response: The commenters pointed to a single study [21] which interpreted only a portion of the health effects data available on coke oven emissions and was subjected to a scientific journal peer review. While such a study would not ordinarily be considered comprehensive enough or broadly-vetted enough to serve as a sole basis for risk estimates in this type of assessment (and indeed to do so could raise Data Quality Guideline issues), we did address the use of the alternately-derived cancer potency in our risk assessment (*i.e.*, compared risk estimates reported in the IRIS and the newer values). Since the use of this value did not substantially affect the level of estimated risks or the associated risk-based decision, EPA undertook no further evaluation of these health effects data. In the future, however, newer assessments of health effects can be readily considered in the residual risk program if they are sufficiently comprehensive and vetted through an appropriate scientific peer review process.

Comment: One commenter said the risk assessment was inconsistent with the Agency's Information Quality Guidelines because EPA did not provide central tendency estimates (*i.e.*, results were restricted primarily to upper bound estimates).

Response: As pointed out by the commenter, we addressed the central tendency requirements of the Information Quality Guidelines in a limited way in the risk assessment that supports this rule. As noted above, the upper-bound potency value that is presented in IRIS is routinely characterized using the standard descriptor for the cancer potency (''upper bound''), by saying that the upper bound is not likely to underestimate risks, that true risks are likely to be less, and that, for some individuals, risk may be zero. As described in the Information Quality Guidelines and reiterated in the recently published cancer guidelines, we will continue to develop and present to the extent practicable an appropriate central estimate and appropriate lower and upper-bound estimates of cancer potency. Development of new methods or estimates is a process that will require independent peer review.

We also understand that most people have daily activities that take them to areas where exposure concentrations are different and move to new residences periodically. Both of these behaviors may tend to lower lifetime exposures to coke oven emissions (*i.e.*, lower than our current assumption of 70-year exposure duration), and therefore lower individual risk attributable to coke ovens. In the proposal preamble (69 FR 48347), we presented an alternative estimate of an individual risk level adjusted to reflect the national average residency time of 12 years for comparison with the results from our 70-year exposure assumption. This change in assumption would result in a lowering of risk by approximately six-fold. It is important to note that if the cancer dose-response is reasonably linear with dose at environmental exposure levels, estimated individual risk attributable coke oven emission is lower for those living fewer years in the affected area, but estimates of total population incidence are not affected if the overall population remains stable (assuming people moving out are replaced by people moving in). Taking this into consideration and to provide better metrics by which to assess population risks in the future, we are currently developing a methodology that may allow us to consider a variety of parameters that could affect risk to populations, not just to the individual, that live in the vicinity of facilities. Other factors (*e.g.*, emigration out of and immigration into the ''exposure area,'' social factors that affect population mobility, and census block size) may also influence the mobility of populations and therefore, affect estimates of exposure and risk. As part of this effort, we are also investigating whether similar probabilistic techniques can be applied to the MIR to develop meaningful alternative metrics of individual risk. While this methodology is currently under development with subsequent evaluation and peer review to follow, we did not have sufficient information to apply any of these factors to these coke oven facilities.

Comment: One commenter said that the risk assessment was inconsistent with the Agency's Information Quality Guidelines because EPA's reasoning for not conducting a more complete probability analysis was not sufficient.

Response: We stated in our proposal that we ''considered the needs and

[21] Moolgavkar, S., *et al.* ''Estimation of Unit Risk for Coke Oven Emissions.'' *Risk Analysis*, vol. 18, no. 6, pages 813–825. 1998.

scope of the assessment'' before deciding whether to do a more refined population analysis and concluded that this ''level of refinement was not necessary * * * because the results of a probabilistic analysis are unlikely to affect the proposed risk management decisions.'' Our decision was that risks to the population at the level of the standard we proposed met the required ample margin of safety determination. Refining the population risk distribution by considering factors such as population mobility in the analysis would not change that decision, only refine the underlying results on which that determination was made. Therefore, we did not believe that the additional expenditure of time and resources to do that analysis was warranted. Also, in making this decision, we believe we are meeting the requirements of the Information Quality Guidelines by providing information that is accurate, clear, complete, and unbiased.

4. Mercury Standards

Comment: One commenter contended that EPA's proposal was unlawful because it excluded controls for mercury. The commenter argued that EPA is required to establish emission standards for each HAP and that section 112(f)(2) requires EPA to consider every HAP that a category emits to ensure that the residual risk standards adequately protect public health and the environment. The commenter cited 2002 Toxic Release Inventory (TRI) data that show AK Steel (Ashland, KY) emits 27 pounds of mercury and that Indiana Harbor Coke reported 650 pounds of mercury emissions.

Another commenter questioned why mercury and other metals were excluded from door leak emission estimates. According to the commenter, mercury is highly volatile and would be expected to occur in emissions or leaks from any part of the process. The commenter also requested that EPA explain why mercury is missing from the list of metals that were monitored in appendix C of the risk assessment document. While mercury is listed as a component of coke oven emissions in one table in appendix C, it is unclear if or how EPA used this mercury emission factor in its analyses.

Response: Our research indicates that most of the mercury that is volatilized from the coal during the coking process at by-product coke batteries is concentrated in the tar when the gas is processed in the by-product recovery plant.[22] The vast majority of the volatiles distilled from the coal are collected and processed to recover by-products. However, the commenter is correct in that emission tests have detected mercury emissions from coke ovens. For example, small quantities of coke oven gas may escape through leaks on doors, lids, and offtakes. The emission factor for mercury in Table C–23 of the risk assessment document shows that trace amounts of mercury have been detected in raw coke oven gas with a ratio to benzene soluble organics (BSO) of 2×10^{-7}. Applying this ratio to the by-product coke plant with the highest BSO emissions (AK Steel in Ashland, Kentucky in Table C–5) gives an estimate of 0.002 lb/yr of mercury emissions from leaks. These low levels of mercury emissions show that mercury emissions from charging, doors, lids, and offtakes do not contribute significantly to the health effects posed by coke oven emissions from by-product coke oven batteries.

The estimate of 27 lb/yr for the AK Steel by-product coke plant was not based on measurements. The company used an emission factor that was developed from a 1991 paper published in Germany. However, it is not in EPA's AP–42 compilation of emission factors, we have been unable to determine its basis and the type of coke battery it was developed for, and we cannot assess its applicability to U.S. coke batteries. We expect more and better data to become available in the future, and these data will be considered when the residual risk is assessed within 8 years of the promulgation of the 2003 NESHAP for pushing, quenching, and battery stacks.

We investigated the TRI reporting and found that most mercury emissions from nonrecovery batteries come from the battery stack rather than leaks on the battery, which are the subject of these final rule amendments. In addition, our examination of the TRI data reveals that the emissions reported by the nonrecovery coke plant (Indiana Harbor Coke) were overestimated and are being corrected. The plant had used an emission factor developed from testing an uncontrolled battery stack at another nonrecovery coke plant. Subsequently the company performed sampling of its own stack and found that its actual mercury emissions from the battery stack were 182 pounds per year (lb/yr). Mercury is emitted from the battery stack on nonrecovery batteries because there is no recovery of the by-products distilled from the coal; however, some mercury in the particulate phase is captured by the baghouse that is used to control emissions. These test data will be considered by EPA when the residual risk is evaluated for the 2003 NESHAP for pushing, quenching, and battery stacks.

Finally, the commenter's assumption that mercury emissions from batteries are not controlled by the standard is not correct. Mercury emissions from leaks on the battery are controlled and regulated the same way as the many other volatile pollutants in raw coke oven gas. The ovens are inspected for leaks, and work practices are used to stop leaks and contain potential emissions within the gas collection system. Standards are in place to limit emissions from charging, doors, lids, and offtakes, and these standards also effectively limit emissions of mercury (as a volatile) and other pollutants that might otherwise occur if these standards were not in place.

5. Consider Other HAP

Comment: Three commenters contended that the risk assessment is deficient because it did not adequately consider the risks associated with emissions of all HAP. One commenter stated that the 13 PBT constituents chosen for cancer and noncancer risk analysis inexplicably excluded both mercury and arsenic and that chromium and mercury were left out of the inhalation risk analysis. Other commenters state that the risk assessment must cover the carcinogenic effects of naphthalene and 1, 3-butadiene; coke and coal dust emissions from uncovered sources; and hydrogen chloride (HCl) emissions.

Response: As stated in the risk assessment document and discussed in an earlier response, inhalation cancer risk from the sources covered by this rule was estimated using the HAP ''coke oven emissions,'' for which we have developed a cancer URE. It is not necessary to consider the presence of each constituent of the mixture of coke oven emissions thought to be carcinogens since their contribution to cancer risk is subsumed into the risk from the mixture. Section 112(f)(6) contemplates such an approach, as we noted in our ''Residual Risk Report to Congress''. In conducting the non-cancer inhalation risk assessment, we did use information (toxicity and emissions) for each constituent because there are inadequate data for a non-cancer assessment of ''coke oven emissions''. In general, we considered the risk due to individual constituents when assessing non-cancer or non-inhalation risks, when assessing risk

[22] Fisher, R. ''Progress in Pollution Abatement in European Cokemaking Industry''. *Ironmaking and Steelmaking.* vol. 19, no. 6., 1992. Pages 449–456.

from emission points where the composition of the mixture may be different, (*e.g.*, after the pushing emission control device), or when the screening level risk assessment was done. The URE for coke oven emissions was used for all identified process operations covered under the 1993 national emission standards for charging, doors, lids, and offtakes and for two emission sources (pushing and quenching) covered by the 2003 NESHAP for pushing, quenching, and battery stacks. For the remaining emission sources which do not emit coke oven emissions (*e.g.*, the battery stack and the pushing emission control device), we selected constituents that had toxicity values and emissions information from these emission points in order to conduct an inhalation risk assessment or a non-inhalation, multipathway assessment. Results for the cancer and non-cancer risk assessment may be found in Tables A–2 through A–9 of the risk assessment document. Multipathway results for those HAP selected based on our selection criteria may be found in Tables A–31 through A–34.

The risk assessment did not include estimates of risk for pollutants such as ammonia, hydrogen sulfide, coal dust, and coke dust because they are not listed as HAP under section 112(b). We do not read section 112(f) as requiring consideration of criteria pollutants and other pollutants which are not HAP. Section 112(f) is the corollary of section 112(d), which of course is directed to control of HAP. It also essentially adopts the pre-1990 standard for control of HAP (*see, e.g.*, Legislative History page 876), which dealt exclusively with control of air toxics. We believe that given this linkage and prior history, Congress would have been explicit had it intended for us to dramatically change course and address risks posed by non-HAP pollutants under section 112(f).

At the time the risk assessment was performed, the cancer URE for naphthalene was not available from the CARB, a source of toxicity information we use if IRIS does not have a benchmark value. Based on the emissions information for this HAP described in the risk assessment document (*i.e.*, depending on the source, emissions of about 10 to 30 times less than the coke oven emission estimates and a cancer URE that is 18 times less potent than the URE for coke oven emissions), naphthalene is not likely to add significantly to the cancer risk estimated for this source or to have an effect on the decision.

The commenters also asked why we did not include chromium, a carcinogen, in the mix of carcinogens we assessed. Unlike naphthalene, hexavalent chromium does have a URE on IRIS, but information we received indicated that hexavalent chromium emissions from this process are unlikely due to the atomic state for this pollutant being highly oxidized and not conducive for forming in a chemical reducing atmosphere such as a coke oven. Thus, the emissions would likely be the trivalent chromium, which has not been shown to be carcinogenic. Another way to look at this issue is to assume a fixed percentage of total chromium is hexavalent. For example, applying the health-protective assumption we used in our Report to Congress on Electric Utilities [23] (that hexavalent chromium comprised 11 percent of the total chromium emissions) would result in a MIR level of approximately 1 in a million. Therefore, it is unlikely that any chromium emissions from the sources considered in this source category would have any significant impact on the estimated total cancer risk.

The URE for arsenic was applied to the battery stack and the pushing emission control device. These emission points are the only ones for which we would use arsenic's specific URE in the risk calculations because the URE for coke oven emissions accounts for the cancer risk from other emission points. The highest MIR for arsenic from these sources was less than 1 in a million.

Table 3–2 in the risk assessment document provides a detailed listing of non-cancer risks at the facility level, which includes estimates for arsenic and hydrogen chloride. The table shows that the maximum HQ for arsenic was 0.3 and was 0.00002 for hydrogen chloride. The non-cancer risks for chromium assuming all emissions are hexavalent would provide a HQ value equal to 0.01, still significantly below a value of 1. We believe, moreover, that this significantly overestimates the risk.

6. Emission Estimates

Comment: One commenter contended that the emission estimates overstated HAP emissions and discussed problems with EPA's emission factors and calculations:

- Emissions from coke oven door leaks were overstated because EPA did not use the exponential model developed in the early 1980s, overestimated the number of leaks visible from the bench and not the yard, and included emissions from doors with no visible leaks.
- The EPA did not adequately justify estimates of the frequency and severity of green pushes and understated the capture efficiency of pushing emission control devices. Benzene emissions from pushing are also overestimated.
- Emissions from battery stacks were overstated because of the extrapolation to higher opacities and the use of questionable test data for benzene.
- Emissions from by-product recovery plant process equipment were overstated because of the use of default values rather than a site-specific approach.

Response: The issue of the exponential model developed in the early 1980s has been discussed in great detail in the background document for AP–42. Relevant excerpts are summarized below:

- The theoretical model was based solely on the self-sealing mechanism and does not account for the current widespread use of supplementary sealants, new door designs, and adjusting the door seal to stop leaks.
- The exponential model is not applicable below 10 percent leaking doors, and current control levels are well below 10 percent.
- The exponential model underestimates emissions when using an arithmetic annual average for percent leaking doors (an exponential averaging of percent leaking doors must be used).
- The exponential model estimates zero emissions when no door leaks are visible from the yard, but we now know there are door leaks that cannot be seen from the yard.
- More recent sampling and analysis of door leaks of various sizes have provided real data on mass emission rates (as opposed to a theoretical and unvalidated model) and form the basis for current estimates.

We used a value of 6 percent leaking doors for doors visible from the bench but not visible from the yard, and the commenter recommended a value of 3 percent based on more recent data. The value of 6 percent is the value recommended in AP–42 and is codified in the 1993 national emission standards (doors inspected from the bench under a cokeside shed are given a correction factor of 6 percent leaking to estimate the ''yard'' equivalent). We acknowledge that the difference between the number of door leaks observed from the bench and from the yard probably varies from battery to battery and at the same battery

[23] Table 6–1, Summary of High-End Risk Estimates from Chronic Inhalation Exposure of HAP for 424 U.S. Coal-Fired Utilities Based on the Baseline Inhalation Risk Assessment. Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units—Final Report to Congress. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Vol. 1. EPA 453/R–98–004a, February 1998, page 6–3.

over time. The commenter also thought the leak rate assigned to the small leaks visible only from the bench was too high. However, this rate was based on the smallest visible leak grade (a grade of 0.5, which is described as a leak that is barely visible and may not be seen from the yard), and we cannot arbitrarily reduce it by 75 percent as the commenter suggested. We included the variability associated with leaks visible only from the bench and the variability in leak rates in our uncertainty analysis. We think that analysis places reasonable bounds on our emission estimates.

We did not include emissions from leaks that were not visible in the emission estimates used in the risk assessment. The potential for emissions from leaks that are not visible was factored into the uncertainty analysis and indicated that actual emissions could be higher than we estimated. However, we also acknowledged that emissions could be lower than we estimated.

The frequency and severity of green pushes used in the risk analysis (not part of the source category at issue) are explained in detail in the background information document for pushing, quenching, and battery stacks (Docket Item OAR–2003–0051–0085). The document estimates the frequency of green pushes once the 2003 NESHAP for pushing, quenching, and battery stacks is fully implemented. Admittedly, better estimates can be made in the future based on actual performance data generated after the compliance date of the final rule amendments. The projections of methylene chloride soluble organics (MCSO) emissions are based on the performance of the best-performing batteries that were used to develop the MACT floor. Data for 3,700 observations from 15 batteries that were the best performers had only one severely green push with an opacity exceeding 50 percent. Two other batteries that will have to improve their performance to meet the standard had 2 percent green pushes. A best estimate of 0.5 percent severely green pushes was judged likely to be an overestimate once all batteries were subject to the standard. For moderately green pushes in the range of 30 to 50 percent opacity, the best-controlled batteries averaged 0 percent to 5 percent of the pushes in this range (13 out of 3,700 observations). An upper-bound estimate of 5 percent was used for moderately green pushes.

A capture efficiency of 10 percent for a severely green push is based on observations that most of the emissions escape capture during pushing and the fact that heavy emissions (some observed at 90 to 100 percent opacity) continue during travel to the quench tower when there is no hood to capture any of the emissions. During a push that is not green, some emissions escape capture and again none of the emissions during travel are captured; consequently, an estimate of 90 percent capture seems reasonable for that case. A best estimate of 40 percent capture was used for moderately green pushes.

The benzene emission factor used for pushing is 2.4×10^{-4} lb/ton of coke based on three runs at one plant producing blast furnace coke. The commenter submitted data from a plant producing foundry coke that showed benzene emissions were less than 9×10^{-5} lb/ton, a factor of about two lower. The amount of benzene emitted from pushing will depend on how green the coke is, and a push that is fully coked would have very little benzene. It is difficult to determine which test is most representative, and the benzene emissions can be expected to be quite variable from push to push. However, even with the higher emission factor, benzene emissions from pushing were not significant in the risk analysis (*e.g.*, less than 100 lb/yr).

The commenter stated that the extrapolation of test results for battery stacks based on opacity is unsupportable because there is no established relationship between opacity and HAP. As explained in the background document, the battery stack that was tested had a very low opacity (1.7 percent), but the 2003 NESHAP are expected to achieve an average opacity of 5 percent for battery stacks. Consequently, applying the test results for this one battery to all other batteries to estimate the emissions once the 2003 NESHAP become effective could underestimate emissions. Although no correlation has been firmly established between opacity and HAP, there is an established relationship between opacity and mass concentration of particles. In addition, sampling and analysis has shown that the PM in battery stack emissions contains HAP, including organic PM and PAH. (These PAH are a primary constituent of coke oven emissions, the primary HAP evaluated in the risk assessment.) Consequently, battery stack emissions were scaled from 1.7 to 5 percent opacity to avoid underestimating emissions from other batteries once the standard is implemented.

The commenter stated that EPA used the results from the two highest of four tests to estimate benzene emissions from battery stacks and that using the average of all four tests would have resulted in emissions that were 40 percent lower. The results for benzene in parts per million (ppm) for the four tests were 0.1 to 0.2, 0.6 to 1.6, 1.8 to 4.1, and 2.6 to 3.2. One of the four tests is an order of magnitude less than the others and appears to be an outlier. The average values of the other three tests are 1, 3, and 3 ppm. We used a value of 3 ppm because it is the statistical mode (most frequently occurring test average), it is representative of two of the four tests, and this value would not tend to underestimate emissions. Using the average value for all four tests would have resulted in an emissions estimate 40 percent lower than our original estimate. However, even if our original estimate overestimates emissions, there were no significant adverse health effects estimated for this source for benzene. In addition, EPA will re-evaluate the emissions and risks from battery stacks within 8 years after the promulgation date of the MACT standard for pushing, quenching, and battery stacks. At that time, the emission estimate will be revised based on additional test data that become available.

Benzene emissions from process equipment in the by-product recovery plant were estimated from AP–42 emission factors, site-specific information on the processes, and their capacities. The commenter recommended using EPA's TANKS model with detailed site-specific information to estimate emissions because it would be more accurate and emissions would be lower. However, the AP–42 emission factors that we used have been widely accepted and used in other contexts, and they account for sources that have controls in place. We did not have detailed and verifiable information for the numerous site-specific factors that would be needed to use the TANKS model. We agree with the commenter that the use of TANKS is an acceptable alternative when such details are available and the model is applicable to the emission point of interest. However, there are some process vessels in the by-product plant where the model is not applicable because it does not fully account for the emission mechanism, such as tanks that are heated or purged and have a vapor flow other than from working and breathing losses, uncovered tanks, those for which there is no good estimate of the vapor phase concentration, and condensers.

The commenter pointed out that we used site-specific monitoring data to estimate benzene emissions from equipment leaks for all plants except one (Tonawanda Coke) and that the emission factors applied to this plant overestimated emissions. We requested

site-specific monitoring data from all plants to estimate emissions, but we did not receive such information from Tonawanda Coke. We agree that generally the site-specific approach provides emission estimates lower than those from the default emission factors. Our emission estimates were health protective, and even with a tendency to overestimate benzene emissions from Tonawanda Coke, the estimated risk from these benzene emissions is low.

C. Comments on Section 112(d)(6) Review Policy

1. Approach for Existing Sources

Comment: Eight commenters agreed that a new analysis of MACT floors for existing sources is not part of the 8-year review requirement. As EPA concluded, such periodic re-determination of the MACT floor would effectively convert existing source requirements into new source requirements. In support, one commenter pointed to the plain language of CAA section 112(d)(6), the legislative history, similar review requirements under sections 109 and 111, and the absence of Congressional intent for new floor analyses.

Two commenters disagreed with EPA's conclusions. One commenter explained that the MACT floor provisions in section 112(d)(3) give meaning to the phrase ''emission standards promulgated under this section'' in section 112(d)(6) so that EPA is obligated to do a new floor analysis when revising the standards for existing sources. In addition, EPA's argument (that omission of the term ''emission limitation achieved'' suggests that no additional floor determination is required) ignores the statutory text. There is no need to include the floor language in section 112(d)(6) since section 112(d)(3) already ensured that any existing source standard would meet the floor requirements. The EPA's other argument (that additional floor analyses would effectively convert existing source standards into new source standards) is unreasonable and not necessarily true because EPA could find that sources do not perform better than the floor level of control. If facilities developed methods to reduce HAP emissions in the previous 8 years, requiring all sources in the category to achieve similar control would be consistent with Congressional intent under section 112 and the specific direction given in section 112(d)(6).

Response: Section 112(d)(6) requires us to ''* * * review, and revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under this section.'' The provision does not mandate that this review be conducted in a single, unvarying manner, other than having to take into account ''developments in practices, processes, and control technologies.''

The commenter maintained that because of the reference to ''emission standards promulgated under this section,'' we are necessarily required to repeat the section 112(d) standard development process which includes re-determining MACT floors. A more natural reading of the provision is that we are to review the section 112(d) standards considering developments in practices, processes, and control technologies. EPA may then, in its discretion, amend the standards if the agency concludes such action is necessary. Indeed, we believe that this is the meaning Congress intended, since section 112(d)(6) originated in House and Senate Committee provisions that predated introduction of the MACT floor language, and mirrors routine periodic reevaluation requirements found in other statutory provisions requiring technology-based standards. Moreover, we reiterate that there is no indication that Congress intended for section 112(d)(6) to inexorably force existing source standards progressively lower and lower in each successive review cycle, the likely result of requiring successive floor determinations (69 FR 48351).

We note that with respect to revision of standards for new sources, the section 112(d)(6) analysis of practices, processes, and control technologies, and costs and emission reductions associated with those technologies (conducted as part of the determination of whether different standards are necessary), may indicate that revised standards for new sources are warranted. The final rule amendments do not adopt different standards for new by-product batteries. New by-product batteries would be required to meet zero leak standards for doors, lid, and offtakes unless a new by-product technology (such as operation of the ovens under negative pressure) is developed. The by-product battery technology currently in use cannot achieve zero leaks; consequently, new coke batteries would likely be nonrecovery batteries, which have been the only type of new battery constructed in the past 20 years. We are amending the charging limit for new nonrecovery batteries to reflect new technical developments (69 FR 48351). These changes can be readily incorporated at new sources with minimal cost.

2. Relationship Between Residual Risk Standards and Review Requirements

Comment: Six commenters stated that once EPA promulgates a standard that provides an ample margin of safety, the review requirement under section 112(d)(6) is satisfied. One commenter stated that Congress intended the section 112(d)(6) review to update the underlying technology-based standards irrespective of residual risk.

Response: We begin by noting ambiguity in the text and placement of section 112(d)(6). The obligation to periodically review (and possibly update) emissions standards applies to standards promulgated under ''this section.'' A possible reading of the word ''section'' is that the periodic review obligation applies not only to emissions standards adopted under section 112(d), but also to emissions standards adopted under any other provision of section 112, including section 112(f) (note that section 112(f)(2) is entitled ''emissions standards''). On the other hand, section 112(d)(6) is placed in the context of section 112(d) generally, which deals only with technology based ''MACT'' standards. This placement could be construed as requiring the periodic review obligation to only apply to emissions standards adopted under section 112(d).

We resolve this ambiguity by concluding that section 112(d)(6) should be interpreted as applying only to standards adopted under section 112(d). This conclusion is based on several factors. First, all of the other provisions of section 112(d) are specific to the obligation to adopt technology standards. It would be inconsistent with the structure of section 112(d) as a whole to conclude that section 112(d)(6) should be construed to apply more broadly than all of the other companion provisions in section 112(d).

Second, it is natural to assume that the technology on which a particular section 112(d) standard is based could evolve over time and allow EPA, as appropriate, to update the standard to reflect the evolving technology. Other text in section 112(d)(6) is clearly focused on this possibility of technological innovation (''* * * taking into account developments in practices, processes, and control technologies * * *''). In contrast, the basic obligation under section 112(f) is to make sure that public health risks due to emissions from a category or subcategory provide an ample margin of safety. Technology (and the possibility that technology will improve over time) remains relevant under section 112(f), but only for the purpose of determining an appropriate

ample margin of safety. Notably, technology is only one of many factors that may be relevant in determining the ample margin of safety. Thus, evolving technology—which is the clear focus of section 112(d)(6)—is central to the purposes of section 112(d), while it is only one consideration among many that may be relevant under section 112(f). If Congress had intended section 112(d)(6) to encompass section 112(f), a broader range of considerations would logically have been mandated for the periodic review.

Finally, we believe our interpretation is supported by legislative history. The genesis of section 112(d)(6) can be traced to earlier bills passed by the Senate and the House, all of which made it clear that the periodic review applied to section 112(d) MACT standards.[24] Of particular weight is the Report of the Senate Committee on Environment and Public Works on the Clean Air Act Amendments of 1989 that clarifies that the section 112(d)(6) review provisions were intended to apply to MACT standards: ''The Administrator is to review and revise emission standards promulgated under section 112(d) no less than every seven years.''

Having said that, we believe that the findings that underlie a section 112(f) determination should be key factors in making any subsequent section 112(d)(6) determinations for the related section 112(d) standard. For example, if the ample margin of safety analysis for the section 112(f) standard was not based at all on the availability or cost of particular control technologies, then advances in air pollution control technology should not justify revising the MACT standard pursuant to section 112(d)(6) because the section 112(f) standard would continue to assure an adequate level of safety. Similarly, if the ample margin of safety analysis for a section 112(f) standard shows that remaining risk for non-threshold pollutants falls below 1 in a million and for threshold pollutants falls below a similar threshold of safety, then no further revision would be needed because an ample margin of safety has already been assured.

D. Specific Comments on Section 112(d)(6) Review of Coke Ovens

1. Nonrecovery Technology

Comment: One commenter stated that EPA admitted that risk levels could be reduced substantially with nonrecovery technology. However, EPA decided not to require this technology because the costs of replacing existing batteries with nonrecovery batteries would be financially crippling to the industry. Although EPA provided some cost estimates, the Agency did not say why that cost would be crippling to the industry or even to the individual companies involved. Rather, EPA explained that the industry is currently depressed and plants might choose to shut down. The EPA must substantiate its claims.

Response: We explained at proposal that replacing existing batteries with nonrecovery batteries would be financially crippling because the construction of a nonrecovery battery requires a capital investment on the order of hundreds of millions of dollars (about $300 per ton of coke capacity). For example, the estimated capital cost to replace batteries on the MACT track ranges from $50 to $290 million per plant based on the existing coke capacity at these plants. Based on recent trends that show a continuing decline in domestic coke capacity due to shutdowns, these coke facilities would be more likely to permanently close rather than construct new nonrecovery batteries. For example, 12 of the 30 coke plants operating in 1993 have permanently shut down, and five of these plants were on the MACT track. Consequently, we determined that requiring the replacement of existing batteries with nonrecovery batteries was not a reasonable or economically feasible option.

We also examined the ability of the companies involved to recoup their investment if they were to replace existing batteries with nonrecovery batteries. The four existing by-product coke plants on the MACT track are owned by two companies: AK Steel, which produces furnace coke for internal consumption, and Tonawanda Coke Corporation, which produces 15 to 20 percent of the foundry coke sold in the U.S. Based on the Quarterly Financial Report from the U.S. Bureau of the Census,[25] the average return on sales for all reporting companies within the iron and steel industries from 2nd Quarter 2003 to 2nd Quarter 2004 ranged from negative 5.9 percent to 9.8 percent. The weighted average price of coke is approximately $120 per short ton. Using the highest profit rate in 2004 (which is optimistic), the implied profit per short ton is approximately $12 per short ton. Our conclusion is that with a 7 percent discount rate, companies would not able to recoup investment for a nonrecovery battery (approximately $300 per ton). Even a 50-year time profile at this profit level would not be sufficient to offset the investment. Therefore these coke facilities would be more likely to permanently close rather than construct new nonrecovery batteries. These closures could have industry wide implications, particularly for the foundry coke market, since Tonawanda accounts for a significant share of foundry coke production in the U.S.

2. Lack of New Requirements

Comment: One commenter believed that the proposed amendments were deficient because they contained no new requirements despite the remaining risk from facilities.

Response: The commenter is incorrect—the final rule amendments are new and provide more stringent requirements for the MACT track batteries. The limit for leaking doors decreases from 5 percent to 4 percent for foundry coke batteries and to 3.3 percent for other batteries, the limit for lid leaks decreases from 0.6 percent to 0.4 percent, and the limit for offtake leaks decreases from 3 percent to 2.5 percent. The standard for new batteries and for reconstructed batteries if there is an increase in capacity is already quite stringent. Except for batteries utilizing a new by-product recovery technology (such as by-product ovens operated under negative pressure), the standard is 0 percent leaking doors, lids, and offtakes. The current by-product battery technology cannot achieve this level of control; consequently, new batteries are likely to use the nonrecovery technology. In fact, the only new batteries constructed over the past 20 years have been nonrecovery batteries.

3. Charging Limit for Nonrecovery Batteries

Comment: One commenter requested that the proposed limit for charging (20 percent opacity for five consecutive charges) in 40 CFR 63.303(d) also apply to existing nonrecovery batteries, not just new batteries as proposed. As proposed, the charging limit would not apply to nonrecovery batteries in the commenter's state (including one existing plant and a new plant for which construction began before the date of proposal).

Response: We based our proposal for more stringent standards for new sources on the performance of the best-controlled source, and this plant was developing an improved capture system

[24] *See* S. 1894, Clean Air Standards Attainment Act of 1987; S. 1630, Clean Air Act Amendments of 1989; and H.R. 3030, Clean Air Act Amendments of 1990.

[25] Table 4, Quarterly Financial Report for Manufacturing, Mining, and Trade Corporations. U.S. Bureau of the Census, Second Quarter, Series QFR 04–2Q. 2004.

for charging emissions. We concluded that it was not appropriate to increase the stringency of the current NESHAP for already-operating nonrecovery batteries. This limit is appropriate for new sources, which are those constructed after the date of proposal of these final rule amendments, because it allows the new requirements to be incorporated into the considerations of design and operation of the new source. Further, we believe that the quantified limits on PM which two of the already-operating nonrecovery batteries are achieving (69 FR 48351–48352) can be readily (and appropriately) incorporated in these batteries' operating permits as part of the State implementation plan process. The suggestion by the commenter that we use this rulemaking to amend the standard for these batteries to lock in their level of performance thus appears to be unnecessary.

4. Costs

Comment: Two commenters asked EPA to avoid characterizing the costs of $4,500/yr as ''small,'' ''minimal'' and ''very little.'' The additional reduction that would be achieved is the last increment in a series of reductions made by a distressed industry. The commenters stated that, in their opinion, the incremental cost effectiveness is actually high ($45,000 per ton), and the costs should be presented in this format. They stated that the EPA should also recognize the industry's success and overall cost in reducing emissions to meet the stringent level of control.

Response: The original 1993 national emission standards resulted in oven repairs, increased maintenance, and better work practices that have reduced emissions to allow batteries to meet a more stringent level of control. All of these activities have resulted in increased costs for the control of emissions, although the emission reduction benefits are substantial. In addition, the 1993 national emission standards require daily monitoring to identify leaks, and the data show the industry's success in reducing emissions.

We believe the cost of complying is reasonable considering that an estimated 200,000 fewer people will be exposed to risks greater than 1 in a million, and the annual cancer incidence would be reduced by 0.03. We agree with the commenters that the estimate of $4,500/yr is the most recent increment in a series of reductions, but remain steadfast in our belief that this number is minimal.

IV. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether the regulatory action is ''significant'' and, therefore, subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Executive Order defines a ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlement, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Under the terms of Executive Order 12866, it has been determined that this regulatory action is a ''significant regulatory action'' because it raises novel legal or policy issues. As such, this action was submitted to OMB for Executive Order 12866 review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

B. Paperwork Reduction Act

The information collection requirements in the final rule amendments have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The information collection request (ICR) prepared by EPA has been assigned EPA ICR No. 1362.07. 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 emission standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies set forth in 40 CFR part 2, subpart B.

The final rule amendments establish work practice requirements designed to improve control of door leaks applicable to all nonrecovery coke oven batteries. The owner or operator also is required to add certain information on malfunctions associated with door leaks to the startup, shutdown, and malfunction plan. New nonrecovery batteries also are required to implement the same work practice standards that already apply to existing nonrecovery batteries. Plant owners or operators are required to submit an initial notification of compliance status and semiannual compliance reports. Records are required to demonstrate compliance with applicable emission limitations and work practice requirements. Additional requirements apply to a new nonrecovery coke oven battery, but none are expected during the 3-year period of this ICR. This action does not impose any new or revised information collection burden on by-product coke oven batteries subject to the final rule amendments. These batteries are currently meeting the monitoring, recordkeeping, and reporting requirements in the 1993 national emission standards.

The increased annual average monitoring, reporting, and recordkeeping burden for this collection (averaged over the first 3 years of the ICR) is estimated to total 448 labor hours per year at a cost of $28,338. This includes an increase of three responses per year from one respondent for an average of about 148 hours per response. No capital/startup costs or operation and maintenance costs are associated with the monitoring requirements.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

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 EPA's regulations in 40 CFR part 63 are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with the final rule amendments. For the purposes of assessing the impacts of today's final rule amendments on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administrations' 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 which is independently owned and operated and that is not dominant in its field.

After considering the economic impacts of today's final rule amendments on small entities, EPA has concluded that this action will not have a significant economic impact on a substantial number of small entities. We have determined that of the five companies subject to the requirements of the final rule amendments, one company (operating a total of three batteries) is considered a small entity but it will experience no significant additional regulatory costs because it is already meeting the stricter emissions limitations for by-product coke oven batteries included in the final rule amendments, as well as the monitoring, recordkeeping, and reporting requirements.

Although the final rule amendments will not have a significant economic impact on a substantial number of small entities, we nonetheless tried to reduce the impact of the final rule amendments on small entities. Prior to proposal, we held meetings with industry trade associations and company representatives to discuss the amendments and have included provisions that address their concerns.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, the EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires the EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least-burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows the EPA to adopt an alternative other than the least-costly, most cost-effective, or least-burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before the EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that the final rule amendments do not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or to the private sector in any 1 year. No significant costs are attributable to the final rule amendments. Thus, the final rule amendments are not subject to the requirements of sections 202 and 205 of the UMRA. In addition, the final rule amendments do not significantly or uniquely affect small governments because they contain no requirements that apply to such governments or impose obligations upon them. Therefore, the final rule amendments are not subject to section 203 of the UMRA.

E. Executive Order 13132: Federalism

Executive Order 13132 (64 FR 43255, August 10, 1999) requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that 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.''

The final rule amendments do not have federalism implications. They 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 affected plants are owned or operated by State governments. Thus, Executive Order 13132 does not apply to the final rule amendments.

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

Executive Order 13175 (65 FR 67249, November 6, 2000) requires EPA to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' ''Policies that have tribal implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and Indian tribes.''

The final rule amendments do not have tribal implications, as specified in Executive Order 13175. They will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes. No tribal governments own plants subject to the MACT standards for coke oven batteries. Thus, Executive Order 13175 does not apply to the final rule amendments.

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

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ''economically significant,'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the EPA must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

While these final rule amendments are not subject to the Executive Order because they are not economically significant as defined in Executive Order 12866, this rule is relevant under Executive Order 13045 because it represents the first application of the Agency's ''Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens.'' In particular, the Supplemental Guidance addresses the potential of an increased susceptibility to developing cancers that may occur later in life associated with exposure to compounds with a mutagenic mode of action in the early-life years. Following the Agency's Supplemental Guidance for compounds that act through a mutagenic mode of action, we have applied a default adjustment factor in developing estimates of lifetime cancer risks in this rulemaking to account for any potential susceptibility that may be due to early-life or childhood exposure. The results of this assessment are contained in section I of this preamble.

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

The final rule amendments are not a ''significant energy action'' as defined in Executive Order 13211 (66 FR 28355, May 22, 2001) because they are not likely to have a significant adverse effect on the supply, distribution, or use of energy. Further, we have concluded that the final rule amendments are not likely to have any adverse energy impacts.

I. National Technology Transfer Advancement Act

Section 112(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (Pub. L. No. 104–113; 15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards (VCS) in their regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impracticable. VCS are technical standards (*e.g.*, material specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. The NTTAA requires EPA to provide Congress, through the OMB, explanations when the Agency decides not to use available and applicable VCS.

The final rule amendments involve technical standards. The final rule amendments use EPA Methods 1, 2, 2F, 2G, 3, 3A, 3B, 4, 5, 5D (PM) and 9 (opacity) of 40 CFR part 60, appendix A.

Consistent with the NTTAA, we conducted searches to identify VCS in addition to these EPA methods. No applicable VCS were identified for EPA Methods 2F, 2G, 5D, and 9. One VCS was identified as an acceptable alternative to EPA test methods for the purposes of the final rule amendments. The ASME PTC 19–10–1981—Part 10, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference) is cited in the final rule amendments for its manual method for measuring the oxygen, carbon dioxide, and carbon monoxide content of exhaust gas. This part of ASME PTC 19–10–1981—Part 10 is an acceptable alternative to Method 3B.

Our search for emissions monitoring procedures identified fourteen VCS applicable to the final rule amendments. The EPA determined that twelve of the VCS identified for measuring PM were impractical alternatives to EPA test methods due to lack of equivalency, detail, specific equipment requirements, or quality assurance/quality control requirements. The two remaining VCS identified in the search were not available at the time the review was conducted because they are under development by a voluntary consensus body: ASME/BSR MFC 13M, ''Flow Measurement by Velocity Traverse,'' for EPA Method 2 (and possibly Method 1) and ASME/BSR MFC 12M, ''Flow in Closed Conduits Using Multiport Averaging Pitot Primary Flowmeters,'' for EPA Method 2. Therefore, EPA did not adopt those VCS for this purpose. Detailed information on the EPA's search and review results is included in the docket.

Sections 63.309(j) through (l) of the final rule amendments list the EPA test methods that are required. Under 40 CFR 63.7(f) and 40 CFR 63.8(f), a source may apply to EPA for permission to use alternative test methods or monitoring requirements in place of any of the EPA test methods, performance specifications, or procedures.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing the final rule amendments and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the final rule amendments in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). The final rule amendments will be effective on April 15, 2005.

List of Subjects in 40 CFR Part 63

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

Dated: March 31, 2005.

Stephen L. Johnson,

Acting Administrator.

■ For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is 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.*

Subpart A—[Amended]

■ 2. Section 63.14 is amended by revising paragraph (i)(3) to read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(i) * * *

(3) 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), 63.3166(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), and 63.9323(a)(3) and Table 5 to Subpart DDDDD of this part.

* * * * *

Subpart L—[Amended]

■ 3. Section 63.300 is amended as follows:

■ a. Redesignating existing paragraphs (a)(3) through (a)(5) as (a)(5) through (a)(7); and

■ b. Adding new paragraphs (a)(3), and (a)(4).

§ 63.300 Applicability.

(a) * * *

(3) July 14, 2005, for existing by-product coke oven batteries subject to emission limitations in § 63.302(a)(3) and for nonrecovery coke oven batteries subject to the emission limitations and requirements in § 63.303(b)(3) or (c);

(4) Upon startup for a new nonrecovery coke oven battery subject to the emission limitations and

requirements in § 63.303(b), (c), and (d). A new nonrecovery coke oven battery subject to the requirements in § 63.303(d) is one for which construction or reconstruction commenced on or after August 9, 2004;

* * * * *

■ 4. Section 63.302 is amended by adding new paragraph (a)(3) to read as follows:

§ 63.302 Standards for by-product coke oven batteries.

(a) * * *

(3) On and after July 14, 2005;

(i) 4.0 percent leaking coke oven doors for each tall by-product coke oven battery and for each by-product coke oven battery owned or operated by a foundry coke producer, as determined by the procedures in § 63.309(d)(1);

(ii) 3.3 percent leaking coke oven doors for each by-product coke oven battery not subject to the emission limitation in paragraph (a)(3)(i) of this section, as determined by the procedures in § 63.309(d)(1);

(iii) 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iv) 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(v) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

* * * * *

■ 5. Section 63.303 is amended as follows:

■ a. Redesignating paragraphs (b)(3) and (b)(4) as (b)(4) and (b)(5);

■ b. Adding new paragraph (b)(3); and

■ c. Adding new paragraphs (c) and (d).

§ 63.303 Standards for nonrecovery coke oven batteries.

* * * * *

(b) * * *

(3) For charging operations, the owner or operator shall implement, for each day of operation, the work practices specified in § 63.306(b)(6) and record the performance of the work practices as required in § 63.306(b)(7).

* * * * *

(c) Except as provided in § 63.304, the owner or operator of any nonrecovery coke oven battery shall meet the work practice standards in paragraphs (c)(1) and (2) of this section.

(1) The owner or operator shall observe each coke oven door after charging and record the oven number of any door from which visible emissions occur. Emissions from coal spilled during charging or from material trapped within the seal area of the door are not considered to be a door leak if the owner or operator demonstrates that the oven is under negative pressure, and that no emissions are visible from the top of the door or from dampers on the door.

(2) Except as provided in paragraphs (c)(2)(i) and (ii) of this section, if a coke oven door leak is observed at any time during the coking cycle, the owner or operator shall take corrective action and stop the leak within 15 minutes from the time the leak is first observed. No additional leaks are allowed from doors on that oven for the remainder of that oven's coking cycle.

(i) Except as provided in paragraph (c)(2)(ii) of this section, the owner or operator may take corrective action and stop the leak within 45 minutes (instead of 15 minutes) from the time the leak is first observed for a maximum of two times per battery in any semiannual reporting period.

(ii) If a worker must enter a cokeside shed to stop a leaking door under the cokeside shed, the owner or operator shall take corrective action and stop the door leak within 45 minutes (instead of 15 minutes) from the time the leak is first observed. The evacuation system and control device for the cokeside shed must be operated at all times there is a leaking door under the cokeside shed.

(d) The owner or operator of a new nonrecovery coke oven battery shall meet the emission limitations and work practice standards in paragraphs (d)(1) through (4) of this section.

(1) The owner or operator shall not discharge or cause to be discharged to the atmosphere from charging operations any fugitive emissions that exhibit an opacity greater than 20 percent, as determined by the procedures in § 63.309(j).

(2) The owner or operator shall not discharge or cause to be discharged to the atmosphere any emissions of particulate matter (PM) from a charging emissions control device that exceed 0.0081 pounds per ton (lbs/ton) of dry coal charged, as determined by the procedures in § 63.309(k).

(3) The owner or operator shall observe the exhaust stack of each charging emissions control device at least once each day of operation during charging to determine if visible emissions are present and shall record the results of each daily observation or the reason why conditions did not permit a daily observation. If any visible emissions are observed, the owner or operator must:

(i) Take corrective action to eliminate the presence of visible emissions;

(ii) Record the cause of the problem creating the visible emissions and the corrective action taken;

(iii) Conduct visible emission observations according to the procedures in § 63.309(m) within 24 hours after detecting the visible emissions; and

(iv) Report any 6-minute average, as determined according to the procedures in § 63.309(m), that exceeds 10 percent opacity as a deviation in the semiannual compliance report required by § 63.311(d).

(4) The owner or operator shall develop and implement written procedures for adjusting the oven uptake damper to maximize oven draft during charging and for monitoring the oven damper setting during each charge to ensure that the damper is fully open.

■ 6. Section 63.309 is amended by adding new paragraphs (j) through (m) to read as follows:

§ 63.309 Performance tests and procedures.

* * * * *

(j) The owner or operator of a new nonrecovery coke oven battery shall conduct a performance test once each week to demonstrate compliance with the opacity limit in § 63.303(d)(1). The owner or operator shall conduct each performance test according to the procedures and requirements in paragraphs (j)(1) through (3) of this section.

(1) Using a certified observer, determine the average opacity of five consecutive charges per week for each charging emissions capture system if charges can be observed according to the requirements of Method 9 (40 CFR part 60, appendix A), except as specified in paragraphs (j)(1)(i) and (ii) of this section.

(i) Instead of the procedures in section 2.4 of Method 9 (40 CFR part 60, appendix A), record observations to the nearest 5 percent at 15-second intervals for at least five consecutive charges.

(ii) Instead of the procedures in section 2.5 of Method 9 (40 CFR part 60, appendix A), determine and record the highest 3-minute average opacity for each charge from the consecutive observations recorded at 15-second intervals.

(2) Opacity observations are to start when the door is removed for charging and end when the door is replaced.

(3) Using the observations recorded from each performance test, the certified observer shall compute and record the average of the highest 3-minute averages for five consecutive charges.

(k) The owner or operator of a new nonrecovery coke oven battery shall conduct a performance test to demonstrate initial compliance with the emission limitations for a charging

emissions control device in § 63.303(d)(2) within 180 days of the compliance date that is specified for the affected source in § 63.300(a)(4) and report the results in the notification of compliance status. The owner or operator shall prepare a site-specific test plan according to the requirements in § 63.7(c) and shall conduct each performance test according to the requirements in § 63.7(e)(1) and paragraphs (k)(1) through (4) of this section.

(1) Determine the concentration of PM according to the following test methods in appendix A to 40 CFR part 60.

(i) Method 1 to select sampling port locations and the number of traverse points. Sampling sites must be located at the outlet of the control device and prior to any releases to the atmosphere.

(ii) Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas. You may also use as an alternative to Method 3B, the manual method for measuring the oxygen, carbon dioxide, and carbon monoxide content of exhaust gas, ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses'' (incorporated by reference, see § 63.14).

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 5 or 5D, as applicable, to determine the concentration of front half PM in the stack gas.

(2) During each PM test run, sample only during periods of actual charging when the capture system fan and control device are engaged. Collect a minimum sample volume of 30 dry standard cubic feet (dscf) during each test run. Three valid test runs are needed to comprise a performance test. Each run must start at the beginning of a charge and finish at the end of a charge (*i.e.*, sample for an integral number of charges).

(3) Determine and record the total combined weight of tons of dry coal charged during the duration of each test run.

(4) Compute the process-weighted mass emissions (E_p) for each test run using Equation 1 of this section as follows:

$$E_p = \frac{C \times Q \times T}{P \times K} \quad \text{(Eq. 1)}$$

Where:

E_p = Process weighted mass emissions of PM, lb/ton;

C = Concentration of PM, grains per dry standard cubic foot (gr/dscf);

Q = Volumetric flow rate of stack gas, dscf/hr;

T = Total time during a run that a sample is withdrawn from the stack during charging, hr;

P = Total amount of dry coal charged during the test run, tons; and

K = Conversion factor, 7,000 grains per pound (gr/lb).

(l) The owner or operator of a new nonrecovery coke oven battery shall conduct subsequent performance tests for each charging emissions control device subject to the PM emissions limit in § 63.303(d)(2) at least once during each term of their title V operating permit.

(m) Visible emission observations of a charging emissions control device required by § 63.303(d)(3)(iii) must be performed by a certified observer according to Method 9 (40 CFR part 60, appendix A) for one 6-minute period.

■ 7. Section 63.310 is amended by adding new paragraph (j) to read as follows:

§ 63.310 Requirements for startups, shutdowns, and malfunctions.

* * * * *

(j) The owner or operator of a nonrecovery coke oven battery subject to the work practice standards for door leaks in § 63.303(c) shall include the information specified in paragraphs (j)(1) and (2) of this section in the startup, shutdown, and malfunction plan.

(1) Identification of potential malfunctions that will cause a door to leak, preventative maintenance procedures to minimize their occurrence, and corrective action procedures to stop the door leak.

(2) Identification of potential malfunctions that affect charging emissions, preventative maintenance procedures to minimize their occurrence, and corrective action procedures.

■ 8. Section 63.311 is amended as follows:

■ a. Revising paragraph (b)(1) and adding new paragraphs (b)(3) through (7);

■ b. Revising paragraph (c)(1) and adding new paragraph (c)(3);

■ c. Revising paragraphs (d)(1) through (3) and adding new paragraphs (d)(4) through (9); and

■ d. Revising paragraphs (f)(1)(i) and (ii) and adding new paragraphs (f)(1)(iv) through (ix).

§ 63.311 Reporting and recordkeeping requirements.

* * * * *

(b) * * *

(1) Statement signed by the owner or operator, certifying that a bypass/bleeder stack flare system or an approved alternative control device or system has been installed as required in § 63.307.

(2) * * *

(3) Statement, signed by the owner or operator, certifying that all work practice standards for charging operations have been met as required in § 63.303(b)(3).

(4) Statement, signed by the owner or operator, certifying that all work practice standards for door leaks have been met as required in § 63.303(c).

(5) Statement, signed by the owner or operator, certifying that the information on potential malfunctions has been added to the startup, shutdown and malfunction plan as required in § 63.310(j).

(6) Statement, signed by the owner or operator, that all applicable emission limitations in § 63.303(d)(1) and (2) for a new nonrecovery coke oven battery have been met. The owner or operator shall also include the results of the PM performance test required in § 63.309(k).

(7) Statement, signed by the owner or operator, certifying that all work practice standards in § 63.303(d)(3) and (4) for a new nonrecovery coke oven battery have been met.

(c) * * *

(1) Intention to construct a new coke oven battery (including reconstruction of an existing coke oven battery and construction of a greenfield coke oven battery), a brownfield coke oven battery, or a padup rebuild coke oven battery, including the anticipated date of startup.

(2) * * *

(3) Intention to conduct a PM performance test for a new nonrecovery coke oven battery subject to the requirements in § 63.303(d)(2). The owner or operator shall provide written notification according to the requirements in § 63.7(b).

(d) * * *

(1) Certification, signed by the owner or operator, that no coke oven gas was vented, except through the bypass/bleeder stack flare system of a by-product coke oven battery during the reporting period or that a venting report has been submitted according to the requirements in paragraph (e) of this section.

(2) Certification, signed by the owner or operator, that a startup, shutdown, or malfunction event did not occur for a coke oven battery during the reporting period or that a startup, shutdown, and malfunction event did occur and a report was submitted according to the requirements in § 63.310(e).

(3) Certification, signed by the owner or operator, that work practices were implemented if applicable under § 63.306.

(4) Certification, signed by the owner or operator, that all work practices for nonrecovery coke oven batteries were implemented as required in § 63.303(b)(3).

(5) Certification, signed by the owner or operator, that all coke oven door leaks on a nonrecovery battery were stopped according to the requirements in § 63.303(c)(2) and (3). If a coke oven door leak was not stopped according to the requirements in § 63.303(c)(2) and (3), or if the door leak occurred again during the coking cycle, the owner or operator must report the information in paragraphs (d)(5)(i) through (iii) of this section.

(i) The oven number of each coke oven door for which a leak was not stopped according to the requirements in § 63.303(c)(2) and (3) or for a door leak that occurred again during the coking cycle.

(ii) The total duration of the leak from the time the leak was first observed.

(iii) The cause of the leak (including unknown cause, if applicable) and the corrective action taken to stop the leak.

(6) Certification, signed by the owner or operator, that the opacity of emissions from charging operations for a new nonrecovery coke oven battery did not exceed 20 percent. If the opacity limit in § 63.303(d)(1) was exceeded, the owner or operator must report the number, duration, and cause of the deviation (including unknown cause, if applicable), and the corrective action taken.

(7) Results of any PM performance test for a charging emissions control device for a new nonrecovery coke oven battery conducted during the reporting period as required in § 63.309(l).

(8) Certification, signed by the owner or operator, that all work practices for a charging emissions control device for a new nonrecovery coke oven battery were implemented as required in § 63.303(d)(3). If a Method 9 (40 CFR part 60, appendix A) visible emissions observation exceeds 10 percent, the owner or operator must report the duration and cause of the deviation (including unknown cause, if applicable), and the corrective action taken.

(9) Certification, signed by the owner or operator, that all work practices for oven dampers on a new nonrecovery coke oven battery were implemented as required in § 63.303(d)(4).

* * * * *

(f) * * *

(1) * * *

(i) Records of daily pressure monitoring, if applicable according to § 63.303(a)(1)(ii) or § 63.303(b)(1)(ii).

(ii) Records demonstrating the performance of work practice requirements according to § 63.306(b)(7). This requirement applies to nonrecovery coke oven batteries subject to the work practice requirements in § 63.303(a)(2) or § 63.303(b)(3).

(iii) * * *

(iv) Records to demonstrate compliance with the work practice requirement for door leaks in § 63.303(c). These records must include the oven number of each leaking door, total duration of the leak from the time the leak was first observed, the cause of the leak (including unknown cause, if applicable), the corrective action taken, and the amount of time taken to stop the leak from the time the leak was first observed.

(v) Records to demonstrate compliance with the work practice requirements for oven uptake damper monitoring and adjustments in § 63.303(c)(1)(iv).

(vi) Records of weekly performance tests to demonstrate compliance with the opacity limit for charging operations in § 63.303(d)(1). These records must include calculations of the highest 3-minute averages for each charge, the average opacity of five charges, and, if applicable, records demonstrating why five consecutive charges were not observed (*e.g.*, the battery was charged only at night).

(vii) Records of all PM performance tests for a charging emissions control device to demonstrate compliance with the limit in § 63.303(d)(2).

(viii) Records of all daily visible emission observations for a charging emission control device to demonstrate compliance with the requirements limit in § 63.303(d)(3).

(ix) Records to demonstrate compliance with the work practice requirements for oven uptake damper monitoring and adjustments in § 63.303(d)(4).

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