

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[OAR-2003-0051; FRL-]

RIN 2060-AJ96

National Emission Standards for Coke Oven Batteries

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule; amendments.

SUMMARY: On October 27, 1993, pursuant to section 112 of the Clean Air Act, the EPA issued technology-based national emission standards to control hazardous air pollutants (HAP) emitted by coke oven batteries. This proposal would amend the standards to include more stringent requirements for certain by-product coke oven batteries to address health risks remaining after implementation of the 1993 standards. We are also proposing amendments to the 1993 standards for emissions of hazardous air pollutants from non-recovery coke oven batteries.

DATES: Comments. Comments must be received on or before [insert date 60 days after publication in the Federal Register].

ADDRESSES: Submit your comments, identified by Docket ID No. OAR-2003-0051, by one of the following methods:

- Federal eRulemaking Portal:
<http://www.regulations.gov>. Follow the on-line

instructions for submitting comments.

- Agency Website: <http://www.epa.gov/edocket>.
EDOCKET, EPA's electronic public docket and comment system, is EPA's preferred method for receiving comments. Follow the on-line instructions for submitting comments.
- E-mail: a-and-r-docket@epa.gov.
- Fax: (202) 566-1741.
- Mail: National Emission Standards for Coke Oven Batteries Docket, Environmental Protection Agency, Mailcode: 6102T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th St. NW., Washington DC 20503.
- Hand Delivery: Environmental Protection Agency, 1301 Constitution Avenue, NW., Room B102, Washington, DC. 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. OAR-2003-0051. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.epa.gov/edocket>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through EDOCKET, regulations.gov, or e-mail. The EPA EDOCKET and the Federal regulations.gov websites are "anonymous access" systems, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through EDOCKET or regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should

avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: 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., CBI 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 National Emission Standards for Coke Oven Batteries Docket, Docket ID No. OAR-2003-0051 or A-79-15, 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 Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: Ms. Lula Melton, Emission Standards Division, Office of Air Quality Planning and Standards (C439-02), Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541-2910, fax number (919) 541-3207, e-mail address:

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SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

Categories and entities potentially regulated by this action include:

Category	NAIC 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 non-recovery coke oven batteries subject to new source emission limitations in 40 CFR 63.303(b). These 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 would be 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.

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

Do not submit information containing CBI to EPA through EDOCKET, regulations.gov or e-mail. Send or deliver information identified as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404-02), U.S. EPA, Research Triangle Park, NC 27711, Attention Docket ID No. OAR-2003-0051. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

C. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of today's proposed amendments is also available on the Worldwide Web (WWW) through the Technology Transfer Network (TTN). Following the Administrator's

signature, a copy of the proposed 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. If more information regarding the TTN is needed, call the TTN HELP line at (919) 541-5384.

D. Will there be a public hearing?

If anyone contacts the EPA requesting to speak at a public hearing by [insert date 20 days after publication in the Federal Register], a public hearing will be held on [insert date 30 days after publication in the Federal Register]. If a public hearing is requested, it will be held at 10 a.m. at the EPA Facility Complex in Research Triangle Park, North Carolina or at an alternate site nearby.

E. How is this document organized?

The information presented in this preamble is organized as follows:

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 - I. National Technology Transfer Advancement Act

II. Background

- A. What is the statutory authority for development of the proposed amendments?

Section 112 of the Clean Air Act (CAA) establishes a two-stage regulatory process to address emissions of

hazardous air pollutants (HAP) from stationary sources. In the first stage, after EPA has identified categories of sources emitting one or more of the HAP listed in the CAA, section 112(d) calls for us to promulgate national technology-based emission standards for sources within those categories that emit or have the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year (known as "major sources"), as well as for certain "area sources" emitting less than those amounts. These technology-based standards must reflect the maximum reductions of HAP achievable (after considering cost, energy requirements, and non-air health and environmental impacts) and are commonly referred to as maximum achievable control technology (MACT) standards. The EPA is then required to review these technology-based standards and to revise them "as necessary, taking into account developments in practices, processes and control technologies," no less frequently than every 8 years.

The second stage in standard-setting is described in section 112(f) of the CAA. This provision requires, first, that EPA prepare a Report to Congress discussing (among other things) methods of calculating risk posed (or potentially posed) by sources after implementation of the

MACT standards, the public health significance of those risks, the means and costs of controlling them, actual health effects to persons in proximity to emitting sources, and recommendations as to legislation regarding such remaining risk. The EPA prepared and submitted this report ("Residual Risk Report to Congress," EPA-453/R-99-001) in March 1999. The Congress did not act on any of the recommendations in the report, triggering the second stage of the standard-setting process, the residual risk phase.

Section 112(f)(2) requires us to determine for each section 112(d) source category whether the MACT standards protect public health with an ample margin of safety. If the MACT standards for HAP "classified as a known, probable, or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million," EPA must promulgate residual risk standards for the source category (or subcategory) as necessary to provide an ample margin of safety. The EPA must also adopt more stringent standards to prevent an adverse environmental effect (defined in section 112(a)(7) as "any significant and widespread adverse effect . . . to wildlife, aquatic life, or natural resources . . ."), but must consider cost, energy, safety, and other relevant

factors in doing so.

B. What is our approach for developing these standards?

Following our initial determination that the individual most exposed for the emissions category considered exceeds a 1 in a million excess individual cancer risk, our approach to developing residual risk standards is based on a two-step determination of acceptable risk and ample margin of safety. The first step, consideration of acceptable risk, is only a starting point for the analysis that determines the final standards. The second step determines an ample margin of safety which is the levels at which the standards are set.

The terms "individual most exposed," "acceptable level," and "ample margin of safety" are not specifically defined in the CAA. However, section 112(f)(2)(B) retains EPA's interpretation of the terms "acceptable level" and "ample margin of safety" provided in our 1989 rulemaking (54 FR 38044, September 14, 1989), "National Emission Standards for Hazardous Air Pollutants (NESHAP): Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants," essentially directing EPA to use the interpretation set out in that notice¹ or to utilize

¹ This reading is confirmed by the Legislative History to section 112(f); see, e.g., "A Legislative History of the Clean Air Act Amendments of 1990," vol. 1, page 877 (Senate

approaches affording at least the same level of protection². The EPA likewise notified Congress in its Residual Risk Report that EPA intended to use the Benzene NESHAP approach in making section 112(f) residual risk determinations.³

In the Benzene NESHAP (54 FR 38044, September 14, 1989), we stated as an overall objective:

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

As explained more fully in our Residual Risk Report, these goals are not "rigid line[s] of acceptability," but rather broad objectives to be weighed "with a series of other health measures and factors."⁴

Debate on Conference Report).

² Legislative History, vol. 1 p. 877, stating that: ". . . the managers intend that the Administrator shall interpret this requirement [to establish standards reflecting an ample margin of safety] in a manner no less protective of the most exposed individual than the policy set forth in the Administrator's benzene regulations . . ."

³ Residual Risk Report to Congress, EPA-453/R-99-001, March 1999, p. ES-11.

⁴ Id.

C. What is unique about the regulatory regime for coke ovens?

The proposed amendments are case-specific for HAP *emissions from coke oven doors, lids, offtake systems, and charging. As explained below, Congress enacted a unique regulatory regime for control of coke oven HAP emissions. Thus, because these emissions are treated uniquely under the CAA, the methods and policies reflected in the proposed amendments should not necessarily be construed as setting a precedent for future rules under the residual risk program established by section 112(f).

As explained in more detail later in this preamble, emissions from charging, door leaks, and topside (lids and offtake systems) leaks are subject to specific statutory requirements and schedules. In particular, section 112(d)(8) established a deadline of December 31, 1992 for the promulgation of MACT standards for designated emission points from these sources and established special requirements for the standards. In addition, section 112(i)(8) established the framework for an alternative regulatory approach that allowed these sources to defer residual risk standards until 2020 by electing to meet two tiers of more stringent standards reflecting the lowest achievable emission rate (LAER)(a technology-based standard

more stringent than MACT). The regulations (58 FR 57911, October 27, 1993) included a second set of additional, more stringent standards for MACT track batteries that must be met on and after January 1, 2003, unless superseded by residual risk standards promulgated under section 112(f).

D. How does today's action comply with the requirements of section 112(d)(8) and (i)(8) that specifically apply to regulation of coke ovens?

Section 112 includes several provisions that specifically govern our implementation of section 112(d) and (f) with respect to coke ovens. First, section 112(d)(8) sets specific minimum targets for technology-based standards promulgated for emissions from charging, door leaks, and topside leaks at coke ovens. Section 112(i)(8) establishes two "tracks" of technology-based standards and specifies different compliance timetables depending on the track chosen by the source. These tracks are generally referred to as the MACT track and the LAER track.

The LAER track batteries are those sources that elected to meet more stringent technology-based standards beginning in 1993. The LAER standards become more stringent over time with the final LAER technology standards becoming effective in 2010. The LAER track batteries are exempt from any residual risk standards until 2020. Consequently, today's

proposed amendments would not set residual risk standards for LAER track batteries.

Today's proposed amendments would instead apply to those existing by-product coke oven batteries that chose the MACT track (five batteries at four plants). These existing by-product coke oven batteries were required, beginning in 1995, to comply with the 1993 MACT standards promulgated for charging, door leaks, and topside leaks. Unlike the LAER track batteries, the MACT track batteries are not entitled to an extension of the residual risk compliance date. Thus, today's action determines, in accordance with section 112(f)(2), that residual risk standards are required for MACT track batteries and accordingly proposes residual risk standards for them.

The specific provisions in section 112(d)(8) and (i)(8) only apply to charging, door leak, and topside leak emissions at coke oven batteries. Our initial list of source categories published on July 16, 1992 (57 FR 31576) also contains a category entitled, "Coke Ovens: Pushing, Quenching, and Battery Stacks." We promulgated MACT standards for these emission points on April 14, 2003 (68 FR 18008). An assessment and decision on any potential residual risk standards for those emission points is required by 2011.

Because the pushing, quenching, and battery stack emission points are an integral part of the same facilities covered by the MACT standards for charging, door leaks, and topside leaks (they not only are part of the same process but emit the same HAP), it is important to consider emissions from all of these points in assessing the risk associated with HAP emissions from coke ovens.⁵ As explained more fully below, we are proposing to make residual risk determinations on a facilitywide basis and we further propose that it is reasonable to defer a total facility risk determination until we make a residual risk determination for the pushing, quenching, and battery stack emission points. Thus, our determination of the ample margin of safety level for the total coke oven facility (all emission points from coke oven batteries) will not be fully addressed until residual risk assessments for all coke plant source categories are completed. Nonetheless, we include estimates of total facility risks in today's proposal, and

⁵ See Legislative History, vol. 1, p. 868, where Sen. Durenberger stated that "EPA shall consider the combined risks of all sources that are colocated with such sources within the same major source." The Senator continued, however, that these standards need not be set at the same time, provided "the standard for the categories in the first group must be sufficiently stringent 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."

we believe that the standards we are proposing today for charging, doors, and topside leaks are sufficiently stringent so that when all residual risk standards have been set for coke plant source categories, the public will be protected with an ample margin of safety from the combined emissions from all emission points from coke oven batteries. We specifically request comment on our proposed use of the facilitywide approach.

E. What is cokemaking?

In a coke oven battery, coal undergoes destructive distillation to produce coke. The coke industry consists of two sectors, integrated plants and merchant plants. Integrated plants are owned by or affiliated with iron- and steel-producing companies that produce furnace coke primarily for consumption in their own blast furnaces. There are nine integrated plants owned by six iron and steel companies. These plants account for 72 percent of United States (U.S.) coke production. Independent merchant plants produce furnace and foundry coke for sale on the open market. Foundry coke is used in foundry furnaces for melting scrap iron to produce iron castings. There are ten merchant plants. As of April 2003, there are 19 coke plants operating 56 coke oven batteries; 46 are by-product batteries, and ten are non-recovery batteries.

A typical by-product battery consists of 40 to 60 adjacent ovens with common side walls made of high quality silica and other types of refractory brick. A weighed amount or specific volume of coal is discharged from the coal bunker into a larry car--a charging vehicle that moves along the top of the battery. The larry car is positioned over the empty, hot oven; the lids on the charging ports are removed; and the coal is discharged from the hoppers of the larry car into the oven. Typically, the individual slot ovens are 36 to 56 feet long, 1 to 2 feet wide, and 8 to 20 feet high, and each oven holds between 15 and 25 tons of coal.

The coal is heated in the oven in the absence of air to temperatures approaching 2,000 degrees Fahrenheit (°F) which drives off most of the volatile organic constituents of the coal as gases and vapors, forming coke which consists almost entirely of carbon. The organic gases and vapors that evolve are removed through an offtake system and sent to a by-product plant for chemical recovery and coke oven gas cleaning.

Coking temperatures generally range from 1,650 to 2,000°F and are on the higher side of the range to produce blast furnace coke. Coking continues for 15 to 18 hours to produce blast furnace coke and 25 to 30 hours to produce

foundry coke.

At the end of the coking cycle, doors at both ends of the oven are removed, and the incandescent coke is pushed out of the oven by a ram that is extended from the pusher machine. The coke is pushed through a coke guide into a special rail car, called a quench car, which transports the coke to a quench tower, typically located at the end of a row of batteries. Inside the quench tower, the hot coke is deluged with water so that it will not continue to burn after being exposed to air. The quenched coke is discharged onto an inclined "coke wharf" to allow excess water to drain and to cool the coke.

There are two non-recovery plants (ten non-recovery batteries) operating in the U.S. As the name implies, this process does not recover the chemical by-products as does the by-product coking process. All of the coke oven gas is burned and instead of recovery of chemicals, this process allows for heat recovery and cogeneration of electricity. Non-recovery ovens operate under negative pressure and are of a horizontal design (as opposed to the vertical design used in the by-product process).

F. What HAP are emitted from cokemaking?

The primary HAP emitted from cokemaking are "coke oven emissions," which includes many organic compounds.

Constituents of primary interest because of adverse health effects include semi-volatiles, such as polycyclic organic matter (POM) and polynuclear aromatic hydrocarbons (PAH). The emissions also include volatile organic compounds (VOC), such as benzene, toluene, and xylene.

Emissions occur at multiple stages of the coking process. Coke oven emissions can be released when the oven is charged with coal. During coking with the oven under positive pressure, emissions occur from leaking doors, lids, and offtakes. On rare occasions during an equipment failure or process upset, coke oven emissions may occur from bypass stacks. We promulgated emission standards for each of these emission points with limits for charging, doors, lids, and offtakes and a requirement to flare any bypassed coke oven gas (40 CFR part 63, subpart L) in 1993.

Coke oven emissions are also released from pushing, quenching, and battery stacks. As noted earlier, we promulgated MACT standards that address these three emission points (40 CFR part 63, subpart CCCCC) in 2003.

Emissions of HAP also occur from the by-product plant that recovers various chemicals from the coke oven gas. The primary HAP in these emissions is benzene. We promulgated the NESHAP for benzene emissions from coke by-product recovery plants (40 CFR part 61, subpart L) in 1989.

G. What are the health effects associated with these HAP?

The toxic constituents of coke oven emissions, the listed HAP, include both gases (e.g., VOC such as benzene) and respirable particulate matter (PM) of varying chemical composition. In addition to the noncarcinogenic effects, there is concern over the potential carcinogenic and/or cocarcinogenic effects of POM, as well as various aromatic compounds (e.g., benzene) and trace metals (e.g., arsenic, beryllium, cadmium, and nickel).

The HAP that would be controlled by the proposed amendments are associated with a variety of adverse health effects. These adverse health effects include chronic health disorders (e.g., cancers, blood disorders, central nervous system and respiratory effects) and acute health disorders (e.g., irritation of skin, eyes, and mucous membranes and depression of the central nervous system).

The degree of adverse health effects experienced by exposed individuals can vary widely. The extent and degree to which the health effects may be experienced depend on various factors, many of which have been considered in the risk assessment performed for the proposed amendments and discussed later in this preamble. Those factors include:

- Pollutant-specific characteristics (e.g., toxicity, half-life in the environment, bioaccumulation, and

persistence);

- Ambient concentrations observed in the area (e.g., as influenced by emission rates, meteorological conditions, and terrain);

- Frequency and duration of exposures; and

- Characteristics of exposed individuals (e.g., genetics, age, preexisting health conditions, and lifestyle), which vary significantly within the population.

Studies of coke oven workers who were exposed to higher levels of coke oven emissions than the populations affected by these proposed amendments have reported an increase in cancer of the lung, trachea, bronchus, kidney, prostate, and other sites. Chronic (long-term) exposure of workers to coke oven emissions has also been associated with conjunctivitis, severe dermatitis, and lesions of the respiratory system and digestive system. We have classified coke oven emissions as a Group A, known human carcinogen.

One of the more important constituents of coke oven emissions (from a health effects point of view) is the trace metal arsenic, a known human carcinogen. Studies of humans occupationally exposed to higher levels of arsenic than the populations affected by these proposed amendments have found increased incidence of lung cancers. Chronic (long-term) exposure to inorganic arsenic has also been associated with

irritation of the skin and mucous membranes, and with neurological injury. Animal studies of inhalation exposure have indicated developmental effects.

Another important constituent of coke oven emissions, benzene, is a known human carcinogen. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene, and we have derived a range of inhalation cancer unit risk estimates for benzene. The value at the high end of the range was used in this assessment. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells, in occupationally exposed humans. Reproductive effects have been reported in women exposed by inhalation to high levels of benzene, and adverse effects for high dose exposures on the developing fetus have been observed in animal tests.

III. Summary of the Proposed Amendments

A. What are the affected sources and emission points?

The affected sources would be each coke oven battery subject to the emission limitations in 40 CFR 63.302 or 40 CFR 63.303 (i.e., the MACT track batteries). As noted above, the proposed amendments would cover emissions from doors, topside port lids, offtake systems, and charging on existing by-product coke oven batteries and emissions from

doors and charging on new and existing non-recovery batteries.

B. What are the proposed requirements?

For existing by-product batteries, the proposed amendments would 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 would be limited to 3.3 percent leaking doors. Visible emissions from other emission points would be limited to 0.4 percent leaking topside port lids and 2.5 percent leaking offtake systems. No change would be made in the limit for charging--emissions must not exceed 12 seconds of visible emissions per charge. Each of these visible emission limits would be based on a 30-day rolling average. The proposed amendments would 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 LAER track batteries. We are not proposing to amend the standards for new by-product batteries.

The monitoring, reporting, and recordkeeping requirements in the existing MACT standards would 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 proposing amendments for the improved control of charging emissions from a new non-recovery battery (i.e., constructed or reconstructed on or after [insert date of publication in the Federal Register]). Fugitive charging emissions would be subject to an opacity limit of 20 percent. A weekly performance test would be required to determine the average opacity of five consecutive charges for each charging emissions capture system. Emissions from a charging emissions control device would be limited to 0.0081 pounds of PM per ton (lb/ton) of dry coal charged. A performance test using EPA Method 5 (40 CFR part 60, appendix A) would be 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 would be required to take corrective action and followup 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 greater than 10 percent opacity would be reported as a deviation in the semiannual compliance report. The proposed amendments would also require the owner or operator to implement a new work practice standard designed to ensure that the draft on the oven is maximized during charging.

We are also proposing a work practice standard for the control of door leaks from all non-recovery coke oven batteries on the MACT track. The owner or operator would be 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 would be required to take corrective action and stop the leak within 15 minutes from the time the leak is first observed. No additional leaks would be allowed from doors on that oven for the remainder of that oven's coking cycle. However, we are also proposing to allow up to 45 minutes

instead of 15 minutes to stop the leak for no more than two occurrences per battery during each semiannual reporting period. The limit of two occurrences per battery would not apply if a worker must enter a cokeside shed to take corrective action to stop a door leak. In this case, 45 minutes would be allowed to stop the leak, and the evacuation system and control device for the cokeside shed must be operated at all times that there is a leaking door under the cokeside shed. The owner or operator would also be 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. Recordkeeping and reporting requirements necessary to demonstrate initial and continuous compliance are also proposed.

We are also proposing an amendment to clarify that the work practice standard for charging in 40 CFR 63.303(a)(2) that applies to existing non-recovery batteries also applies to new non-recovery batteries. These work practices are described in 40 CFR 63.306(b)(6).

As specified in the CAA section 112(f)(4)(A), the owner or operator of an existing by-product coke oven battery on the MACT track would have to comply with the proposed amendments within 90 days of the effective date of the final

rule amendments. We are also proposing that non-recovery coke oven batteries on the MACT track comply within 90 days (or upon startup for a new non-recovery battery which comes into existence after [insert date of publication in the Federal Register]).

IV. Rationale for the Proposed Amendments

A. How did we estimate risks?

Cancer and noncancer health impacts caused by environmental exposures generally cannot be isolated and measured directly. Even if it were possible to do so, we would not be able to use measurements to assess the impacts of future or alternative regulatory control strategies. As a result, modeling-based risk assessment is used as a tool to estimate health risks for many EPA programs. In risk assessments, there are many possible levels of analysis from the most basic screening approach to the more refined, detailed assessment.

Our "Residual Risk Report to Congress" (EPA-453/R-99-011) provides the general framework for conducting risk assessments to support decisions made under the residual risk program. The 1999 Report to Congress acknowledged that each risk assessment design would have some common elements. In general, each assessment would contain a problem formulation phase where the content and scope of each

assessment would be specified, an analysis phase where the exposure and effects relationship would be evaluated, and the risk characterization phase where the risks would be calculated and interpreted. While the final risk assessment used to support the decisions in these proposed amendments used advanced modeling of site-specific data for many modeling parameters and population characteristics derived from census data, we also used default assumptions for exposure parameters - some of which are assumed to be health protective (e.g., exposure frequency and exposure duration, 70-year constant emission rates).^{6, 7} However, in keeping with the tiered approach laid out in the Report to Congress, we decided that a quantitative description of uncertainty in the final risk characterization was not necessary for this assessment because it likely would not have altered the decision to propose further standards. The approach used to assess the risks associated with our coke oven standards is consistent with the technical approach and policies described in the Report to Congress.

B. What did we analyze in the risk assessment?

We performed a detailed risk assessment for the four

⁶ Additional details are provided in Table 2-10 of the risk assessment document in the rulemaking docket.

⁷ Residual Risk Report to Congress, pp. B-18 and B-22.

by-product coke facilities (five MACT track batteries). Given the small number of facilities, we chose to analyze each of these facilities in a site-specific manner. As described earlier, there are multiple source categories associated with coke ovens, each with its own standards. There are two MACT standards that affect this industry (i.e., the 1993 national emission standards for charging, topside leaks, and door leaks and the 2003 NESHAP for pushing, quenching, and battery stacks), as well as the 1989 NESHAP for coke by-product recovery plants and the 1990 NESHAP for benzene waste operations. Using an iterative assessment approach, we assessed emissions and estimated risks from all emission points at each coke facility. The initial screening-level analysis considered all emission points to determine if a more refined analysis was necessary and to determine the focus of such an analysis. A more refined analysis was then performed to determine the maximum individual risk and the risk distribution around the facilities. Results from the refined analysis are presented in this preamble.

Emission points associated with the coking process include charging, door leaks, topside leaks, pushing, quenching, battery stacks, and the by-product recovery plant. To estimate baseline risks (both baseline facility-

wide emissions and baseline of 1993 MACT emission points), we assumed that each battery was in compliance with its required performance level and that emission rates were equivalent to those allowed by the national emission standards. We modeled emissions at the rate allowed by the national emission standards because it represents the source's potential emissions and risks, and is, therefore, consistent with the language in section 112(f)(2), which states that "if standards promulgated pursuant to subsection (d) . . . do not reduce lifetime risk . . . to less than one in a million, the Administrator shall promulgate standards under this subsection. . ." We specifically request comments on this interpretation of section 112(f)(2).

Emission estimates for individual batteries were based on battery-specific data such as coking time; the number of doors, lids, and offtakes on each battery; and the number of charges per year, as well as the performance standards for those emission points (5 percent leaking doors, 0.6 percent leaking lids, 3 percent leaking offtakes, and 12 seconds of visible emissions per charge). For the facility with two operating coke batteries, emission estimates for both batteries were combined to yield a risk estimate from the facility. The battery characteristics were obtained from a survey of the industry and from an EPA report that assessed

control performance for these emission points at a coke facility that is similar to those included in this assessment. Information on the tons of coke produced and the tons of coal charged were also obtained from the industry survey. Emission estimates were based on emission factors for each emissions point and the applicable regulatory emissions limit. Our uncertainty analysis shows that the use of site-specific data and emission factors results in an uncertainty range for the emission estimates for leaks from doors, lids, and offtakes that may be a factor of 2 lower or a factor of 3 higher for these combined emission points. The uncertainty is dominated by the emissions from leaking doors, which comprise approximately 90 percent of the total emissions. We did not evaluate the uncertainty in estimates of charging emissions, which contribute less than 7 percent of the total emissions. Additional information on the uncertainty analysis is included in the risk assessment document.

Emissions from pushing, quenching, and battery stacks were derived from two EPA tests, one at a battery producing foundry coke and one at a battery producing furnace coke. Pushing emission estimates included fugitive emissions and emissions from control devices. Because emissions vary depending on the type of push experienced (e.g., "green"

pushes result when coal is not fully coked), emission factors were used for the range of pushes experienced. Supporting data for estimating the number and frequency of green pushes were obtained from visible emission observations at several facilities. We then calculated an overall pushing emissions rate based on the frequency of green pushes and emission factors for each type of push. Emissions from quenching and battery stacks were based on emissions tests.

Emissions from the by-product recovery plant were estimated from information on the type of processes at each facility, emission factors for each process, and the facility capacity. Emissions from equipment leaks were based on the number of equipment components at each facility, the composition of process liquids, and emission factors for each component. Emissions from benzene waste operations were estimated from site-specific data on the quantity of benzene in wastewater. In assessing risk from all of the emission points mentioned above, we used a combination of site-specific data and estimation techniques as inputs to the models used to evaluate risk and hazard.

Our analysis of non-recovery batteries on the MACT track indicates that emissions from charging and door leaks are relatively low. There are no emissions from lids and

offtakes because existing non-recovery batteries in the U.S. do not have these emission points. There are no emissions from door leaks during most normal operations because the ovens usually operate under negative pressure. Our modeling approach based on allowable emissions under MACT (zero percent leaking doors for non-recovery batteries) would estimate no door leak emissions at all. However, we recently obtained information that indicates certain equipment failures or operating problems can temporarily create a positive pressure in an oven and cause a door to leak. These events are considered to be short in duration and the problem can be quickly remedied (typically within 5 to 15 minutes). In order to ensure that door leak emissions are minimized, we have addressed these equipment failures and operating problems in our proposed amendments to the 1993 national emission standards. The proposed revisions would require that corrective actions be implemented promptly if such events occur.

With respect to emissions from charging, non-recovery ovens are operated under maximum draft during charging, and the organic compounds that may be generated during the process are mostly contained within the oven and combustion system. A small amount of charging emissions may escape from an oven through the opening used for charging.

However, all non-recovery batteries have a capture hood and baghouse to control these emissions.

Consequently, we would not anticipate any adverse public health or environmental impacts due to emissions from charging and coke oven doors at non-recovery batteries.

C. How were cancer and noncancer risks estimated?

The primary HAP emitted by this category are coke oven emissions which include POM, PAH, benzene, and other air toxics known or suspected to cause cancer and other health problems. For estimating cancer health risk due to inhalation exposure, emissions were based on the benzene soluble organics (BSO) fraction that was used as the surrogate for coke oven emissions in the epidemiology study which established coke oven emissions as a human carcinogen. In the assessment of noninhalation risk, coke oven emissions were characterized and speciated (i.e., individual constituents were identified). A set of 13 constituents⁸ was selected based on an analysis of their persistence, bioaccumulation, and toxicity (PBT). Emission estimates were determined for all constituents identified based on measurements of the chemical composition of the emissions

⁸ Constituents of coke oven emissions selected for this assessment include: acenaphthene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, cadmium, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, lead, and pyrene.

from various emission sources. For this risk assessment, emission estimates for coke oven emissions (as BSO) were determined for charging, door leaks, topside leaks, fugitive pushing, and quenching emission points for by-product batteries. Emission rates for individual constituents were estimated for the pushing control device and battery stack emission points. Emission rates also were estimated for the HAP compounds known to be emitted from the by-product recovery plant (benzene, xylene, and toluene).

To characterize the risk from exposure to these HAP, toxicity information was integrated with results from the exposure assessment. For this assessment, we modeled exposures to the total population living within 50 kilometers (km) of each of these facilities and estimated the exposure concentrations where people live and the cancer risks associated with lifetime exposures to coke oven emissions and to the individual constituents for which we have cancer unit risk factors. Where reference values for noncancer effects were available, we also evaluated the potential hazard associated with those effects. The selection and use of cancer unit risk factors and reference dose or concentration values for this assessment follows the approach outlined in the 1999 "Residual Risk Report to Congress." The approach used to assess the risks associated

with our coke oven standards is likewise consistent with the technical approach and policies described in the report. Our assessment has also been peer-reviewed to ensure that its methodology rests on sound scientific principles, and we have revised the assessment document to reflect comments made as part of the peer-review process. The assessment document, comments made during the peer review, and a summary of our responses to those comments are included in the docket for the proposed amendments.

D. How did we estimate the atmospheric dispersion of emitted pollutants?

As described in our Report to Congress, risk assessments may use a variety of models to describe the fate and transport of HAP released to the atmosphere. The models chosen must be appropriate for the intended application. In the fairly unique case of coke ovens, the collective heat rising from various emission points can significantly enhance the rise of the emissions plume, functioning like a "representative" stack. In order to include this aspect in the modeling, we used the Buoyant Line and Point Source (BLP) dispersion model. The BLP model, however, was not designed to consider the effects of the surrounding terrain on dispersion nor to model deposition of HAP as the plume disperses. To allow consideration of these parameters, we

coupled the BLP model with the Industrial Source Complex Short Term (ISCST3) model. In this application, we used the BLP model to estimate the plume height and then used that value as an input to the ISCST3 model. The ISCST3 model was used to simulate the subsequent dispersion and transport of the emissions. Site-specific inputs to the BLP model such as facility location, battery layout, dimensions, orientation, and operating temperatures were provided by the industry.

Both the BLP and the ISCLT3 models have undergone standard scientific peer reviews prior to this assessment. The concept of coupling these two models together was peer-reviewed for the first time as part of this assessment. The reviewers agreed with the modeling concept and approach. Monitoring data may be useful for evaluating modeling approaches used to estimate ambient concentrations (see the risk assessment document for discussion of when this is appropriate). For the sites and pollutants included in this risk assessment, no ambient monitoring data were available. Therefore, it was not possible to evaluate the modeling approach beyond what was done in the peer review. Moreover, even if comprehensive and high quality monitoring data were available, they would not be adequate by themselves for evaluating the impacts of alternative control strategies.

E. What factors are considered in the risk assessment?

The risk assessment was designed to generate a series of risk metrics that would provide information for a regulatory decision. The metrics consider both the maximum individual risk and the total population risk, the latter providing perspective on the potential public health impact by addressing each of the following questions:

- How many people living around the four by-product facilities have potential risk greater than 1 in a million?
- How many people are there at various risk levels?
- What are the impacts for different routes of exposure (e.g., inhalation and ingestion)?

In addition, we are to determine if any adverse environmental effects exist.

Consistent with standard atmospheric dispersion modeling practice, we assessed inhalation risks within 50 km (about 30 miles) of each of the four facilities. The annual average concentrations at the area-weighted centers of census blocks or block groups were estimated using the ISCST3 model for each emission point. Based on the number of people residing in each block or block group along with the estimated concentrations in each block or block group, we generated an estimate of risk for all people living within 50 km (about 30 miles) of each coke facility, including an identification of which census block group had

the estimated maximum air concentration. For this estimate, we assumed that the individual is exposed to the maximum level of coke oven emissions allowed by the 1993 national emission standards, and, as prescribed in the 1989 Benzene NESHAP, that they are exposed to these emissions 24 hours a day for 70 years. Where risk estimates exceeded 1 in a million, we identified the number of people at the various risk levels exceeding 1 in a million (i.e., the population risk distribution). For this estimate, we also assumed exposure occurred 24 hours a day for 70 years because we wanted a conservative upper-bound estimate of the population at risk.

Because of their chemical and physical properties, some HAP are known to present potential health risks as a result of deposition, persistence, and bioaccumulation in environmental media other than air. As a result, exposure to these HAP may occur by ingestion as well as by inhalation. Thirteen constituents of coke oven emissions were identified as PBT chemicals (i.e., they are environmentally persistent, they may bioaccumulate, and are toxic). Emissions of these pollutants are transported from the emission site by atmospheric processes and removed from the air by both wet and dry deposition. Upon deposition, they may cycle through various environmental compartments,

such as soil, plants, animals, and surface water. The movement of these constituents through these compartments can be modeled using a fate and transport model in order to estimate human exposure through the ingestion pathway.

We conducted multimedia, multipathway exposure modeling (using the EPA's Indirect Exposure Model) to determine if emissions from coke ovens present potential risks by routes of exposure other than inhalation. Site-specific modeling was performed for all four facilities using information collected on land use, population, soil types, farming activity, and watershed/waterbody locations and areas. The assessment was based on a subsistence farmer scenario located where land-use data identified actual farming activity around each of the four facilities (agricultural lands were identified at distances ranging from 1.7 to 11 km from the four coke facilities). This scenario reflects an adult living on a farm and consuming meat, dairy products, and vegetables that the farm produces. The animals raised on the farm subsist primarily on forage that is grown on the farm. We also assumed that the farm family fishes in nearby waters at a recreational level, and that they eat the fish they catch. These results allow for comparison of risks by ingestion with those presented by inhalation.

F. How did we calculate risks?

Cancer risks were characterized for the inhalation exposure pathway using lifetime excess cancer risk estimates which are calculated as the product of the unit risk estimate (URE) (the unit risk estimate is an upper-bound estimate of the probability of developing cancer over a lifetime) and the exposure concentration estimated for each HAP. The cancer risk estimates for each HAP are summed across all carcinogenic HAP. These estimates represent the probability of developing cancer over a lifetime as a result of exposure to emissions from these coke ovens.

Noncancer risks were characterized through the use of hazard quotient (HQ) and hazard index (HI). An HQ is calculated as the ratio of the exposure concentration of a pollutant to its benchmark concentration. An HI is the sum of HQ for HAP that target the same organ or system.

The maximum individual risk was estimated deterministically. More probabilistic presentations and analyses (ranging from simple risk distributions to more quantitative Monte Carlo simulations)⁹ may be done to better understand the assessment uncertainty and variability. As our Residual Risk Report to Congress suggested, we would consider doing a probabilistic analysis after considering the needs and scope of the assessment. This is consistent

⁹ Residual Risk Report to Congress, pp. 94-128.

with the policy of EPA as stated in the 1997 "Policy for Use of Probabilistic Analysis in Risk Assessment," which states ". . . it is not the intent of this policy to recommend that probabilistic analysis be conducted for all risk assessments supporting risk management decisions."¹⁰ The policy also states ". . . probabilistic methods should be used wherever the circumstances justify these approaches." As discussed earlier in this preamble, we determined that this level of refinement was not necessary for this risk assessment because the results of a probabilistic analysis are unlikely to affect the proposed risk management decisions.

G. How did we assess environmental impacts?

In order to assess whether the continuing emissions from these four coke oven facilities could contribute to adverse environmental effects, we performed a screening-level ecological risk assessment. We intentionally designed this assessment to be protective of the health of ecological receptors. It was not intended to be used in predicting specific types of effects to individuals, species, populations, or communities or to the structure and function of the ecosystem. We used the assessment to identify HAP or sources which may pose potential risk or hazard to

¹⁰ Policy for Use of Probabilistic Analysis in Risk Assessment, EPA Science Policy Council. May 15, 1997.

ecological receptors and, if so, would need to be evaluated in a more refined level of risk assessment.

The screening endpoints were the structure and function of generic aquatic and terrestrial populations and communities, including threatened and endangered species, that might be exposed to HAP emissions from these four facilities. The assessment endpoints were relatively generic with respect to descriptions of the environmental values that are to be protected and the characteristics of the ecological entities and their attributes. We assumed in the assessment that these ecological receptors were representative of sensitive individuals, populations, and communities that may be present near these facilities.

The HAP included in the ecological assessment were the metals cadmium and lead and 11 PAH: acenaphthene, anthracene, benzo(a)pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, fluoranthene, fluorene, pyrene, and indeno-123(cd)pyrene. We derived estimated media concentrations for each of these HAP from the media concentrations estimated in the multipathway exposures assessment. We chose exposure pathways to reflect the potential routes of exposure through sediment, soil, water, and air. We selected these environments because they are considered representative of locations of generic

populations and communities most likely to be exposed to the HAP. Within these environments the receptors evaluated consisted of two distinct groups: terrestrial and aquatic (i.e., including aquatic, benthic, and soil organisms; terrestrial plants and wildlife; and herbivorous, piscivorous, and carnivorous wildlife).

The chronic ecological toxicity screening values used in the assessment were estimates of the maximum concentrations that should not affect survival, growth, or reproduction of sensitive species after long-term (more than 30 days) exposure to HAP. We screened HAP, pathways, and receptors using the ecological HQ method, which simply calculates the ratio of the estimated environmental concentrations to the selected ecological screening values.

H. What are the results of the risk assessment?

Table 1 of this preamble summarizes the estimated maximum individual risk using the modeled ambient air concentrations from the refined air modeling assessment and risk distribution for the four facilities at the baseline emissions level (i.e., risks based on MACT allowable emission levels allowed by the three regulations for all emission points assessed across the four coke facilities). Table 1 of this preamble also shows the estimated risks attributable to emissions from only charging, door, and

topside leaks under the 1993 national emission standards. These latter emissions contribute about 38 percent of total facility HAP emissions.

TABLE 1. BASELINE RISK ESTIMATES DUE TO HAP EXPOSURE
BASED ON 70-YEAR EXPOSURE DURATION¹

Parameter	Facility	1993 national emission standards
Maximum individual risk from facility with highest risk	500 in a million	200 in a million
Annual cancer incidence summed for all four facilities (cases/year)	0.1	0.04
Population at risk across all four facilities (modeled to 50 km)		
>1 in a million	900,000	300,000
>10 in a million	50,000	8,000
>100 in a million	300	8
Total modeled	4,000,000	4,000,000

¹ All risk, cancer incidence, and population estimates are rounded to one significant figure.

The maximum individual facility-level risk (i.e., modeled risk based on emission levels allowed by the three regulations for all emission points assessed) is 500 in a million compared to 200 in a million for emissions only from those processes associated with the 1993 national emission standards. This level of risk was seen at only one of the four facilities assessed. The maximum individual facility-level risk values for the other three facilities were 50,

100, and 100 in a million compared with risks of 20, 50, and 70 in a million, respectively, for emissions associated with only the 1993 national emission standards.

The annual cancer incidence (the number of cancer cases estimated to occur) for all facilities combined is 0.1 and 0.04 cases per year based on the facility level versus the emissions level from sources subject to the 1993 national emission standards, respectively. Across all four facilities, and assuming the entire population is exposed for 70 years, approximately 900,000 persons (approximately 20 percent of total population) are estimated to be exposed to risks greater than 1 in a million for the total facility emissions compared to 300,000 persons (approximately 7 percent) for the emission points subject to the 1993 national emission standards.

We also evaluated potential risks for adverse health effects other than cancer. The estimated maximum inhalation HI for any noncancer effect from an entire facility is 0.4 for hematologic (blood) effects due to benzene. In addition, results from a multipathway risk assessment presented in the risk assessment document shows that cancer risks from inhalation exposures exceed cancer risks due to ingestion, generally, by an order of magnitude. In this same assessment, the noncancer ingestion HI was estimated to

be 0.001. This level was seen at two facilities assessed with high-end exposure factors.

The results of a screening-level ecological assessment show that each of the coke plants had ecological HQ values less than 1 for all pollutants assessed. Therefore, it is not likely that the HAP emitted would pose an ecological risk to ecosystems near any of these facilities. It is also not likely that any threatened and endangered species, if they exist around these facilities, would be adversely affected by these HAP emissions because they are not likely to be any more sensitive to the effects of these HAP than the species evaluated.

The risk analysis assumed that all emission points from the batteries are leaking or emitting at the maximum rate allowable under the 1993 national emission standards for charging, doors, and topside leaks, since it is theoretically possible that these amounts of emissions could occur. However, this assumption (although theoretically possible) overstates actual emission levels. We analyzed 1,000 to 2,600 daily compliance determinations for each battery to compare the actual average emissions to the maximum rate allowed under the 1993 national emission

standards as modeled.¹¹ The results of this analysis indicate that average performance is better than the current MACT limits and is closer to the more stringent 2010 LAER limits. The five MACT track batteries average 44 percent of the MACT limit for doors leaks, 16 percent of the limit for lid leaks, 21 percent of the limit for offtake leaks, and 27 percent of the limit for charging. An average performance that is better than the limit is to be expected because if batteries were to operate on average at the level of the 1993 national emission standards, they would likely exceed the standards a high percent of the time. Consequently, facility owners and operators consistently operate below the standards to avoid violations.

Table 2 of this preamble repeats (from Table 1) the estimated risks attributable to charging, doors, lids, and offtakes at the baseline level (i.e., the level of risk assuming emissions from the batteries are at the maximum allowed by the 1993 national emission standards). Table 2 of this preamble further projects risks at the 2010 LAER level.

¹¹ We updated the database to include inspections in 2003. There was only a small change from the previous database used in the risk analysis for actual emissions, and the update did not have a significant impact on the estimate of emissions and risks.

TABLE 2. RISK ESTIMATES DUE TO HAP EXPOSURE
BASED ON 70-YEAR EXPOSURE DURATION

Parameter	1993 national emission standards	2010 LAER
Maximum individual risk at facility with highest risk	200 in a million	180 in a million ¹
Annual cancer incidence summed for all four facilities (cases/year)	0.04	0.03
Population at risk across all four facilities (modeled to 50 km)		
>1 in a million	300,000	200,000
>10 in a million	8,000	7,000
>100 in a million	8	6
Total modeled	4,000,000	4,000,000

¹ The maximum individual risk estimate of 180 in a million is presented with two significant figures in order to show the risk reduction expected by the 10 percent decrease in emissions we anticipate seeing between the 1993 and 2010 emission levels.

The maximum individual risk is 200 in a million for the baseline and 180 in a million for the 2010 LAER limits. For the baseline, 93 percent of the total modeled population is exposed to risk levels less than 1 in a million compared to 95 percent for the 2010 LAER limits (based on 70-year exposure duration). However, because these facilities are in fact performing better than the limits in the 1993 national emission standards (i.e., they could already meet the 2010 LAER limits), the difference in risk between the

two scenarios may be smaller than the table indicates (and could be as small as zero).

We acknowledge that there are uncertainties in various aspects of risk assessment due to the use of some modeling and exposure assumptions. In this risk assessment, the use of these assumptions is likely to result in our overestimating the maximum individual risk and the magnitude of risk experienced by individual members of the population. For example, Tables 1 and 2 of this preamble present estimates of the number of people whose individual risk exceeds various levels (e.g., 1 in a million, 10 in a million, 100 in a million) under different scenarios (e.g., 1993 national emission standards, 2010 LAER). We based these estimates on an assumption that everyone in the modeled population (4 million people) is exposed to the maximum level of coke oven emissions allowed by the MACT standard rather than the actual emissions known to occur now, and that they were exposed to these emissions in one place of residence for 70 years. Such a scenario is very unlikely because individuals typically do not occupy the same residence for such a long period of time (e.g., the median residential occupancy period is approximately 9 years, and less than 0.1 percent of the population is estimated to occupy the same residence for greater than 70

years). Because EPA typically assumes that an individual's excess lifetime risk of cancer is directly proportional to their duration of exposure to the carcinogen(s) in question, reducing the duration of exposure for individuals in the modeled population would reduce the estimates of their risk.

To illustrate this, we performed an additional analysis that showed that the average excess lifetime cancer risks for individuals in the modeled population are likely to be about six times less than we predicted. These results are based on using the national average residency time of 12 years as the exposure duration rather than 70 years. We then used these results to develop a rough lower-bound estimate of the distribution of population risks, which suggests that the numbers of people exposed to risk levels greater than 100, 10, and 1 in a million could be as low as 0, 200, and 70,000, respectively. These are likely to be under-estimates because we assumed people would move entirely out of the area after their current stay. We are working on a better way to more accurately estimate population risks for future residual risk assessments.

We must temper these data with the understanding that when individuals move to another location, they are replaced by new residents which would increase the total number of people exposed beyond the 4 million assumed in this

assessment. Also, because of the assumed proportionality described above, if a more detailed exposure duration treatment were used, the predicted cancer incidence in the total modeled population would not change, but the expected distribution of risk in that population would have fewer individuals in the upper risk ranges. In addition, the risks may not change appreciably for individuals moving elsewhere in the same community. As a result, the total number of exposed individuals likely would be greater than we predicted in Tables 1 and 2 of this preamble (the number of exposed individuals is a function of the length of time that the emissions, as modeled, continue).

I. What is our decision on acceptable risk and ample margin of safety?

Section 112(f)(2)(A) of the CAA states that if the MACT standards for a source emitting a:

. . . known, probable, or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category . . . to less than one in one million, the Administrator shall promulgate [residual risk] standards . . . for such source category.

The risk to the individual most exposed to emissions from coke ovens is 1 in a million or greater. Coke oven batteries subject to the proposed amendments emit known, probable, and possible human carcinogens, and, as shown in

Tables 1 and 2 of this preamble, we estimate that the maximum individual risk (discussed below) associated with the limits in the 1993 national emission standards is 200 in a million. Even if we were to consider the uncertainty and variability in the exposure and modeling assumptions used to derive our estimate of maximum individual risk, such an analysis is unlikely to change any decisions that would be made based on that level of risk.

In the 1989 Benzene NESHAP, the first step of the ample margin of safety framework is the determination of acceptability (i.e., are the estimated risks due to emissions from these facilities "acceptable"). This determination is based on health considerations only. The determination of what represents an "acceptable" risk is based on a judgment of "what risks are acceptable in the world in which we live" (54 FR 38045, quoting the Vinyl Chloride decision at 824 F.2d 1165) recognizing that our world is not risk-free.

In the 1989 Benzene NESHAP, we determined that a maximum individual risk of approximately 100 in a million should ordinarily be the upper end of the range of acceptable risks associated with an individual source of pollution. We defined the maximum individual risk as "the estimated risk that a person living near a plant would have

if he or she were exposed to the maximum pollutant concentrations for 70 years." We explained that this measure of risk "is an estimate of the upperbound of risk based on conservative assumptions, such as continuous exposure for 24 hours per day for 70 years." We acknowledge that maximum individual risk "does not necessarily reflect the true risk, but displays a conservative risk level which is an upper bound that is unlikely to be exceeded."

Understanding that there are both benefits and limitations to using maximum individual risk as a metric for determining acceptability, the Agency acknowledged in the 1989 Benzene NESHAP that "consideration of maximum individual risk . . . must take into account the strengths and weaknesses of this measure of risk." Consequently, the presumptive risk level of 100 in a million provides a benchmark for judging the acceptability of maximum individual risk, but does not constitute a rigid line for making that determination. In establishing a presumption for the acceptability of maximum individual risk, rather than a rigid line for acceptability, we explained in the Benzene NESHAP that risk levels should also be weighed with a series of other health measures and factors, including:

- The numbers of persons exposed within each individual lifetime risk range and associated incidence

within, typically, a 50 km (about 30 miles) exposure radius around facilities;

- The science policy assumptions and estimation uncertainties associated with the risk measures;
- Weight of the scientific evidence for human health effects;
- Other quantified or unquantified health effects;
- Effects due to co-location of facilities and co-emission of pollutants; and
- The overall incidence of cancer or other serious health effects within the exposed population.

In some cases, these health measures and factors may provide a more realistic description of the magnitude of risk in the exposed population than that provided by "maximum individual risk."

We consider the level of risk resulting from the limits in the 1993 national emission standards to be acceptable for this source category. Although the calculated level of maximum individual risk (200 in a million) is greater than the presumptively acceptable level of maximum individual risk under the Benzene NESHAP formulation (100 in a million), we also considered other factors in making our determination of acceptability, as directed by the Benzene NESHAP. The principal factors that influenced our decision

are the following: more than 93 percent of the exposed population has risks less than 1 in a million; fewer than 8 people in the exposed population have risks exceeding 100 in a million; the annual incidence of cancer resulting from the limits in the 1993 national emission standards is estimated as 0.04 cases, or 1 case per 25 years; and, in practice facilities are achieving emissions levels less than the limits in the 1993 national emission standards, such that the actual risks from those sources are less than those presented for the modeled population in Tables 1 and 2 of this preamble. The levels of these measures of risk, when considered in combination, are acceptable. In addition, no significant noncancer health effects or adverse ecological impacts would be anticipated at this level of emissions. Therefore, the risks associated with the limits in the 1993 national emission standards are acceptable after considering maximum individual risk, the population exposed at different risk levels, the projected absence of noncancer effects and adverse ecological effects, estimation uncertainty, and the other factors described earlier.

In the second step of the ample margin of safety framework, we considered setting standards at a level which may be equal to or lower than the acceptable risk level and which protect public health with an ample margin of safety.

In making this determination, we considered the estimate of health risk and other health information along with additional factors relating to the appropriate level of control, including costs and economic impacts of controls, technological feasibility, uncertainties, and other relevant factors.

We considered options that might provide a level of control more stringent than the acceptable risk level for this source category (1993 national emission standards). One obvious option is to evaluate the 2010 LAER limits, since these limits are already specified in the statute as benchmarks. Our review of the data shows that these limits can be achieved by the MACT track batteries and will result in improved emission control. Three of the batteries have never exceeded the 2010 LAER limits for all four emission points. The historical data show that the remaining two batteries have exceeded the limit for doors in a few instances. These same two batteries have never exceeded the 2010 LAER limits for charging and offtakes. One of these two batteries has occasionally exceeded the limit for lids. The control technology for these emission points is a work practice program that includes procedures to identify leaks and to seal them when they occur. Increased diligence in controlling door and lid leaks would allow these batteries

to achieve compliance with the 2010 LAER limits. The additional effort to control door and lid leaks would not require additional personnel. The available information indicates that an increase in maintenance labor and sealing materials would be the primary components of any small increase in costs. The cost is estimated at \$4,500/yr based on the projected number of additional leaks to be sealed and a conservative estimate of 30 minutes of labor per leak.

We also considered the feasibility of emission limits more stringent than the 2010 LAER limits. We analyzed emissions data from the four by-product coke plants consisting of 3 to 7 years of daily compliance demonstrations for each battery. The inspection data show that the batteries have achieved the 2010 LAER limits a high percentage of the time. However, the data also show that there is variability in the level of control that is achieved over time, and emission limits that are not-to-be exceeded must account for this variability. Variability can be introduced by a number of factors, such as the type of seals (metal, luted, or water seals); coking conditions (cycle time, temperature, coal mix, oven pressure, whether furnace or foundry coke is produced); battery features (design, age, condition of brickwork and structural steel); weather conditions; and different work crews, as well as the

variability inherent in Method 303 inspections.

For door leaks, recent Method 303 inspection data show that three batteries have consistently achieved the 2010 LAER limits, but these batteries have had compliance determinations that approached those limits (e.g., 3.5 percent leaking doors compared to a limit of 4 percent). The other two batteries sometimes were higher than the proposed limit of 4 percent leaking doors and reported maximum values of 4.7 and 4.4 percent leaking. These two batteries averaged only one door leak during inspections. Considering that leaks cannot be entirely eliminated at all times, we are not certain that more stringent limits that approach zero door leaks can be achieved consistently. The data show that the 2010 LAER limits have been achieved a high percent of the time; however, the data do not show that these batteries have achieved more stringent levels on a not-to-be-exceeded basis.

The data show a similar situation for lid leaks and the proposed limit of 0.4 percent leaking lids. All five batteries on average perform below the limit. However, the batteries approach or exceed the 2010 limit on occasion due to inherent variability. One battery had maximum values that exceeded the limit (up to 0.5 percent leaking lids), one battery had maximum values equal to the limit (0.4

percent leaking lids), and three batteries approached the limit at 0.3 percent leaking lids. All of the batteries averaged less than one lid leak during the inspections with averages of 0.1 to 0.3 lid leaks per inspection.

For offtake leaks, two batteries approached the limit of 2.5 percent leaking with inspection results of 2.4 percent leaking. The other three batteries had maximum values of 1.3 to 1.9 percent leaking. The average number of leaking offtakes during the inspections ranged from 0.1 to 0.9 leaks. Considering that these batteries approach or exceed the 2010 limits for lids and offtakes on occasion while averaging less than one leak per inspection, we cannot conclude that limits more stringent than those proposed have been demonstrated as achievable on a consistent basis.

For charging, all five batteries consistently met the proposed limit of 12 seconds per charge with maximum values of 4 to 9 seconds per charge. We evaluated the feasibility of a more stringent emission limit for charging. The data indicate that a limit of 9 seconds per charge has been achieved by the five batteries on a consistent basis. However, charging emissions contribute only 8 percent of the total emissions from the four emission points, and a 25 percent reduction in the charging emission limit would result in only a 2 percent reduction in overall emissions.

A more stringent charging emission limit would achieve only a negligible reduction in emissions and risk while increasing the potential for non-compliance. Consequently, we determined that a more stringent charging emission limit is not warranted.

We considered one other option that would reduce risk beyond the 2010 LAER levels--requiring facilities to convert to the non-recovery cokemaking technology. We considered this technology because of its potential environmental benefits and because Congress required that we evaluate this technology as a basis for emission standards for new coke oven batteries.

Replacing existing batteries with non-recovery batteries would be financially crippling to the industry. The construction of a non-recovery 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. The domestic coke industry is currently economically depressed, and the lower cost of imported coke has adversely affected domestic production. 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 non-recovery 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 non-recovery batteries was not a reasonable or economically feasible option.

We examined more closely the current performance of the MACT track batteries, emissions and risks based on current performance, and the potential cost impacts of the 2010 LAER limits. As with many industrial processes, performance of coke oven batteries is variable from day to day. Recognizing this, the MACT and LAER standards are 30-day averages of seconds of charging and percent of leaking doors, lids and oftakes. A consequence of this is that longer-term averages (a year or longer) necessarily will be lower than the highest 30-day average during the same time period - 40 to 73 percent lower for leaking doors, and lower for the other parameters, based on the level of emissions control achieved during recent visible emission inspections. This results in actual emissions lower than would occur if all facilities emitted consistently at the allowable 30-day average limits: 7.3 tons/yr of BSO based on actual visible

emission observations vs. 11.2 tons/yr based on allowable visible emissions.

In Table 3 of this preamble, we provide risk estimates for these current "actual emissions".

TABLE 3. RISK ESTIMATES BASED ON 70-YEAR EXPOSURE DURATION

Parameter	1993 national emission standards sources based on the allowable emission limits	1993 national emission standards sources based on current actual emissions ¹
Maximum individual risk at facility with highest risk	200 in a million	140 in a million
Annual cancer incidence summed for all four facilities (cases/year)	0.04	0.02
Population at risk across all four facilities (modeled to 50 km)		
>1 in a million	300,000	200,000
>10 in a million	8,000	6,000
>100 in a million	8	6
Total modeled	4,000,000	4,000,000

¹ Based on the level of emission control achieved during visible emissions inspections conducted from 1995 through 2003 (nationwide emissions estimated as 7.3 tons/yr).

When we examined compliance records for the four facilities, we found that they all met all the 2003 MACT levels for charging and for percent of leaking doors, lids and offtakes, except for one battery at one facility for

percent leaking doors, in the first years after the MACT rule was published (but before the 2003 level took effect). After that time, that facility stayed below the 2003 MACT level. That facility's 30-day levels of percent leaking doors were above the 2010 LAER level several times into 1998, but then stayed below that level since that time.

Two batteries at a second facility stayed consistently below the 2003 MACT level for percent leaking doors, but had a number of events where the 30-day average exceeded the 2010 LAER level, as recently as 2001 and 2002. Similarly, one battery at that facility, while staying below the 2003 MACT level for percent leaking lids, had a few episodes when it exceeded the 2010 LAER level.

For the other facilities and for the other parameters, the batteries showed consistent compliance not only with the 2003 MACT levels, but with the 2010 LAER levels. In some cases, the maximum 30-day averages in the compliance history would have been relatively close to the 2010 LAER levels (3.0 percent maximum vs. 3.3 percent 2010 LAER percent leaking doors level for one facility, for example) but most would be less close.

Given this compliance history, only one facility would need to alter its practices in any way to consistently meet the levels being proposed today, equivalent to the 2010

LAER. The available information indicates that an increase in maintenance labor and sealing materials would be the primary components of any small increase in costs. The cost is estimated at \$4,500/yr based on the projected number of additional leaks to be sealed and a conservative estimate of 30 minutes of labor per leak. We estimate that this facility's annual emissions would decrease by about 0.1 tons/yr. We anticipate no additional actions or costs at the other three facilities, and consequently no change in their emissions.

We estimate that there would be very small changes in the resulting risks because the one facility that we expect to take action as a result of the levels being proposed has only 8 percent of the total modeled population, its estimated maximum risk level is 70 in a million, and the total reduction in emissions is likely to be relatively small (from 7.3 tons/yr to 7.2 tons/yr). The maximum individual risk at the facility with the highest risk would not change, nor would the number of people at a risk above 100 in a million for all facilities (because we know from the data that all six of the individuals estimated to be at this level of risk reside around one of the three facilities currently meeting the 2010 LAER limits). We anticipate very small decreases in the total annual cancer incidence summed

across all four facilities and in the estimated number of people at a risk above 10 in a million and 1 in a million. These decreases are well within the noise level of our ability to estimate such changes.

We determined that the 2010 LAER limits provide an opportunity for additional control and are achievable and reasonable. We believe that these coke oven batteries can achieve the 2010 LAER limits at a reasonable cost. Establishing more stringent limits or requiring the non-recovery technology is not technologically or economically feasible. Therefore, our proposed determination is that control to the 2010 LAER levels would provide an ample margin of safety to protect public health and the environment.

We expect that implementation of the proposed limits would reduce the estimated risk that a person living near a facility would have if he or she were exposed to that level for 70 years. Implementation of the proposed limits would ensure that we provide the maximum feasible protection against the estimated health risks by protecting the greatest number of persons to an individual lifetime risk level of no higher than 1 in a million. Specifically, under the proposed standard, more than 95 percent of the persons living within 50 km of the coke plants would be exposed at

risk levels less than 1 in a million, as compared with more than 93 percent under the current standard. Additionally, 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. These emissions do not "exceed a level which is adequate to protect public health with an ample margin of safety."¹² Actual emissions would be reduced from 7.3 tons/yr to 7.2 tons/yr at a cost of \$4,500/yr. No coke oven batteries are projected to close because of the proposed amendments. We specifically request comments on how measured data and modeled data are used to support the proposal.

As noted earlier, this analysis relates only to emissions from a single source category associated with coke oven batteries, not with total facility risk. If we adopt the facilitywide approach when the residual risk review for other source categories at coke plants is conducted, we plan to evaluate the risk associated with emissions from the other source categories. Moreover, we propose that an ample margin of safety should be obtained for emissions from the entire facility. If we adopt the facilitywide approach, delaying a determination of facilitywide risk is, for practical purposes, a necessity. First, EPA has only

¹² Section 112 of the Clean Air Act.

recently promulgated MACT standards for other emission points at coke oven facilities (i.e., pushing, quenching, and battery stacks) and lacks information on what actual emissions will be once those standards take effect. Such information is directly relevant to assessing ample margin of safety (from the standpoint of both risk, technical feasibility, and cost). Second, at least one of the facilities involved in the present proposal contains a LAER battery as well as a MACT battery. Facilitywide determinations of risk for such facilities necessarily must be delayed due to the statutory delay for assessing residual risk from LAER batteries.

Finally, delaying facilitywide risk determinations appears to have some support in the legislative history of CAA section 112(f). That history suggests that although "residual risk standards shall be sufficient to protect the most exposed person with an ample margin of safety from the combined hazardous emissions of an entire major source," EPA need not do so in a single step.¹³ Rather, since the statute establishes a staggered schedule for issuing standards:

. . . the residual risk standards for such other categories do not have to be set until the

¹³ Legislative History at 868 (Senate Debate on Conference Report, emphasis added).

prescribed later dates, but the standards for the categories in the first group must be sufficiently stringent 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.¹⁴

Here, as shown in Table 1 of this preamble, EPA has considered total baseline emissions and there is "sufficient room so that the combined risks from all parts of [coke oven batteries] do not exceed the ample margin of safety level."¹⁵

J. What determination is EPA proposing pursuant to CAA section 112(d)(6)?

Section 112(d)(6) requires us to review and revise MACT standards as necessary every 8 years, taking into account developments in practices, processes, and control technologies that have occurred during that time. If we find relevant changes, we may revise the MACT standards and develop additional standards.¹⁶

The EPA does not read the provision as requiring another analysis of MACT floors for existing and new

¹⁴ Id.

¹⁵ Id. at 868-69.

¹⁶ Technical review of LAER track standards occurs on a different time frame than MACT track batteries. Section 112(i)(8)(C) requires such review by January 2007. Thus, we are not considering any changes to LAER track battery standards in this rulemaking.

sources. First, there is nothing in the language of section 112(d)(6) that speaks clearly to the issue of whether or not another floor analysis is required. Indeed, the requirement that EPA consider "practices, processes, and control technologies" suggests that no additional floor determination is required, since it omits mention of "emission limitation achieved," the critical language in section 112(d)(3) triggering the requirement to determine floors for existing sources. Our position that floors are not required to be redetermined is further demonstrated by the fact that the provision for periodic review of the MACT standards was included in the 1990 draft legislation (i.e., the House and Senate Committee reported bills) before the floor provisions (which came from later amendments to the Committee bills) were introduced.

The EPA also believes that interpreting section 112(d)(6) as requiring additional floor determinations could effectively convert existing source standards into new source standards. After 8 years, all sources would be performing at least at the MACT levels of performance, so that the average of the 12 percent of those best performers would be performing at a lower level still, probably approaching that of new sources. The EPA sees no indication that section 112(d)(6) was intended to have this type of

inexorable downward ratcheting effect. Rather, we read the provision as essentially requiring EPA to consider developments in pollution control at the sources ("taking into account developments in practices, processes, and control technologies," in the language of section 112(d)(6)), and assessing the costs, non-air quality effects, and energy implications of potentially stricter standards reflecting those developments.

EPA also solicits comment on the relationship between section 112 (d) (6) and 112 (f). If EPA were to determine that standards adopted under section 112 (f) (or section 112 (d) standards evaluated pursuant to section 112 (f)) provide an ample margin of safety to protect public health and prevent adverse environmental effects, one can reasonably question whether further reviews of technological capability are "necessary" (section 112 (d) (6)).

Applying these principles here to by-product coke oven batteries, although no new control technologies have been developed since the original standards were promulgated, our review of emissions data revealed that existing MACT track batteries can achieve a level of control for door leaks and topside leaks more stringent than that required by the 1993 national emission standards. The emissions data for these batteries show that the more stringent limits for LAER track

batteries have been achieved in practice on a continuing basis through diligent work practices to identify and stop leaks. However, as discussed in detail in the consideration of more stringent limits in this preamble, the data also show that the batteries are not consistently "over-achieving" the proposed 2010 LAER limits. Consequently, emission limits more stringent than those we are proposing to establish under section 112(f) (i.e., the 2010 LAER limits) are not warranted.

We also conducted a review of the MACT standards for new by-product batteries. Our finding in this review was that there should be no change in these standards because we have identified no new technologies or control techniques that would support limits more stringent than the current standards for new by-product batteries.

We also reviewed the MACT standards for new and existing non-recovery batteries. There are no existing non-recovery batteries on the MACT track subject to the requirements in 40 CFR 63.303(a). Consequently, we are not revising those requirements.

Our review of the MACT requirements for new non-recovery batteries indicated that additional requirements for new sources are warranted based on the performance of the best-controlled existing sources. There is one

non-recovery plant on the MACT track, and it is subject to the limits for new sources in the 1993 national emission standards. The new source standard in 40 CFR 63.303(b)(2) requires that this plant install a capture and control system for charging emissions. However, at the time the national emission standards were developed, no information was available that could be used to develop an emissions standard for charging emissions. Charging emissions are controlled primarily by using a high draft to contain emissions within the oven's combustion system, and additional control is provided by capturing and controlling any fugitive emissions that escape from the oven. A measure of the effectiveness and performance of charging emission control is the opacity of the fugitive emissions that escape the oven and its capture system. In 1998 and 1999, opacity readings for charging emissions were documented at this non-recovery plant. During startup in 1998, the plant achieved 20 percent opacity (3-minute average) for 95 percent of the charges that were observed. In 1999, the control performance improved to 99 percent of the opacity observations less than 20 percent. When the opacity observations were averaged over five charges, the variability was reduced, and a 20 percent opacity limit was achieved over 99 percent of the time. The few exceedances

of 20 percent were caused by equipment malfunctions, changes in the coal grind, or inexperienced operators. These data indicate that a limit of 20 percent opacity (averaged over five charges) can be achieved, and that such a limit ensures that charging emissions are consistently well controlled. This limit reflects the performance of the best-controlled similar source. Consequently, we are proposing to revise the standards to incorporate a limit of 20 percent opacity for charging for new sources.

This non-recovery plant has a permit requirement that oven damper adjustments be made to maximize oven draft during charging, which ensures better containment of charging emissions within the combustion system. This requirement represents an improvement in control technology that should be applied to new sources. Consequently, we are proposing a requirement for new non-recovery batteries that the draft on the oven be maximized during charging. The proposed revisions would also require that records be kept to demonstrate compliance with the work practice standard, including procedures for monitoring damper position during charging to ensure that the draft is maximized.

Our review also indicates that the batteries at this plant are equipped with a baghouse to control charging emissions. An emission limit (in the plant's operating

permit) of 0.0081 pounds of PM per ton of dry coal (lb/ton) has been achieved by these batteries. Consequently, we are proposing an emission limit of 0.0081 lb/ton for charging emission controls at new non-recovery batteries. We are also proposing a daily observation for visible emissions from the charging emissions control device to ensure it operates properly on a continuing basis. If any visible emissions are observed, corrective action must be taken to find and remedy the cause of the visible emissions. A visible emissions observation must be made within 24 hours by EPA Method 9 (40 CFR part 60, appendix A), and the opacity must be less than 10 percent to demonstrate that the corrective action was successful.

The EPA views all of these proposed changes for charging as reflecting developments in practices and control technologies at reasonable cost without appreciable non-air environmental impacts. Consequently, these proposed requirements for new sources are appropriate under section 112(d)(6).

We also reviewed the current MACT standards for door leaks in 40 CFR 63.303(b)(1), which require either zero percent leaking doors or monitoring the pressure in each oven or common tunnel to ensure the ovens are operated under negative pressure. Both of these options are based on

monitoring doors once each day of operation. The intent of these requirements is to assure that no doors leak during normal operation. However, as explained earlier in this preamble, following these practices does not necessarily result in no leaks. We are proposing to amend the MACT standards to clarify this fact, and to assure that the extent and number of any such leaks are minimized. At the same time, our review indicates that there have been no changes in technology or emission control that would warrant more stringent emission standards for these sources. Consequently, we are not proposing more stringent requirements for coke oven doors under section 112(d)(6).

We specifically request your comments on our review of the 1993 national emission standards and our proposed determinations under CAA section 112(d)(6).

K. Why are we amending the requirements in the 1993 national emission standards for door leaks on non-recovery batteries?

We are proposing to amend the requirements in the 1993 national emission standards for door leaks at non-recovery batteries on the MACT track to ensure that the existing standards reflect MACT. The current MACT standards for door leaks in 40 CFR 63.303(b)(1) require either zero percent leaking doors or monitoring the pressure in each oven or

common tunnel to ensure the ovens are operated under negative pressure. The intent of these requirements is to assure that no doors leak during normal operation. We recently obtained information from the affected facility that indicates certain equipment failures or operating problems can temporarily create a positive pressure in a non-recovery oven and cause a door to leak. The principal operating problems that can cause a door to leak include plugging of an uptake damper (resulting in a loss of oven draft) and fouling of the heat exchanger used for heat recovery (resulting in a positive back pressure). These events are very infrequent and short in duration because the problem is quickly remedied (typically in 5 to 15 minutes).

Our review of the door leak standards indicates that the current requirements in the 1993 national emission standards should be strengthened to ensure that door leaks do not occur regularly and to ensure that when leaks do occur, they are promptly stopped. The current standard does not address the rare occurrences when the equipment that controls the oven's draft may malfunction and cause minor leakage around the door area. We are proposing to supplement the current requirements with additional requirements to ensure that the minor leaks are promptly corrected.

The non-recovery plant subject to the MACT standards has developed procedures to assure that corrective actions are taken to stop leaks within 15 minutes. Problems with uptake dampers and fouled heat exchangers are quickly remedied, and the plant has instituted preventative measures to minimize their occurrence. Based on the plant's current practices, we have developed a proposed revision that would require that any door leak be stopped within 15 minutes by taking corrective actions. We are also proposing an exception that would allow up to 45 minutes to stop the leak for no more than two occurrences per battery during any semiannual reporting period. This exception is designed to accommodate the situations where 15 minutes may not be enough time to identify the cause of the leak and take corrective actions to stop the leak. We are allowing up to 45 minutes to stop a leak if a worker must enter a cokeside shed to take corrective action. After a door leak has been stopped, no additional leaks would be allowed from that oven during the remainder of its coking cycle. We are proposing monitoring provisions to require that each door be observed for visible emissions immediately after charging. We are also proposing that the startup, shutdown, and malfunction plan be expanded to identify failures that create door leaks, develop corrective actions for each potential

failure, and establish preventative procedures to minimize their occurrence. These requirements are designed to ensure that even if an infrequent door leak occurs, the leak is stopped promptly.

The primary impact of the proposed amendments on the affected non-recovery plant would be additional labor to monitor for emissions and to identify and correct any problems associated with emissions from charging and doors. The revisions would not impose new substantive additional controls and are designed to assure that the non-recovery plant implements its current procedures on a continuing basis. The plant is expected to incur a total annualized cost of about \$28,000 per year as a result of the proposed revisions.¹⁷

We are also clarifying that the work practice requirements for charging for existing non-recovery plants also apply to new non-recovery plants. This was the intent of the original rule; however, the requirement is not stated clearly in the 1993 national emission standards. This revision will not affect the non-recovery plant subject to the new source standards in the 1993 national emission standards because the work practice requirements have

¹⁷ Additional details are provided in the supporting statement for the Information Collection Request.

already been incorporated into its operating permit. However, the proposed revision will clarify that the work practice requirements apply to non-recovery plants that might be constructed in the future.

L. What are the estimated cost impacts of the proposed amendments?

We evaluated the cost impacts of the proposed amendments for existing by-product coke oven batteries and believe that the MACT track batteries can achieve the 2010 LAER limits with only a minimal increase in cost. Our conclusion is based on a review of inspection data that show the level of control that these plants are currently achieving.

The results of several years of daily compliance determinations show that all five MACT track batteries have met the 2010 LAER limits for charging and offtakes 100 percent of the time. There should be no incremental increase in costs for these emission points.

The review of the past 3 years of daily compliance determinations for door leaks shows that three batteries met the 2010 LAER limits 100 percent of the time; consequently, these batteries will incur very little costs beyond those currently being incurred to control door leaks. One plant with two batteries had a few excursions of the proposed

limit. One of these batteries met the limit 99 percent of the time, and the other met it 95 percent of the time. These two batteries have hand-luted doors, and leaks are controlled by applying sealing material. These batteries may incur minor increases in labor, supervision, and sealing materials to achieve the small improvement in control that is needed.

Four of the batteries have achieved the 2010 LAER limit for lid leaks 100 percent of the time and should incur little additional costs. One battery achieved the limit 96 percent of the time and may incur some additional cost. However, lid leaks are not difficult to control because they only require the application of sealant to a flat horizontal surface. Increased diligence in identifying and stopping lid leaks may be required. We estimate the cost of additional control of door leaks and lid leaks at one plant at \$4,500/yr for additional labor and materials to identify and seal leaks.

We also evaluated the cost impacts of the proposed amendments for non-recovery batteries. There has been only one new non-recovery plant constructed in the past 30 years, and we have no indication that a new non-recovery battery will be constructed and operated in the next 5 years. Consequently, we expect no cost impacts in the near term

from our proposed requirements for charging for new non-recovery batteries. Our proposed amendments for door leaks will affect one non-recovery plant. However, this plant is already implementing most of the proposed requirements as part of its routine operation. We expect that some increased labor will be incurred to identify and correct the infrequent occurrence of door leaks. In addition, there will be some burden associated with reporting and recordkeeping for these events. We estimate that the additional requirements proposed for door leaks will result in an increase in total annualized cost of \$28,000 per year.

V. 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 proposed amendments have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The ICR document prepared by EPA has been assigned EPA ICR No. 1362.05.

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 proposed amendments would establish work practice requirements designed to improve control of door leaks applicable to all non-recovery coke oven batteries. The owner or operator also would be required to add certain information on malfunctions associated with door leaks to the startup, shutdown, and malfunction plan. New non-recovery batteries also would be required to implement the same work practice standards that already apply to existing non-recovery batteries. Plant owners or operators would be required to submit an initial notification of compliance status and semiannual compliance reports. Records would be required to demonstrate compliance with applicable emission limitations and work practice requirements. Additional requirements would apply to a new non-recovery coke oven battery, but none are expected during the 3-year period of this ICR. This action would not impose any new or revised

information collection burden on by-product coke oven batteries subject to the proposed 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 this 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 proposed 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.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for the proposed rule, which includes this ICR, under Docket ID number OAR-2003-0056. Submit any comments related to the ICR for the proposed rule to EPA and OMB. See the ADDRESSES section at the beginning of this notice for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Office for EPA. Because OMB is required to make a decision concerning the ICR between 30 and 60 days after [insert date of publication in the Federal Register], a comment to OMB is best assured of having its full effect if OMB receives it by [insert date

30 days after date of publication in the Federal Register].

The final rule amendments will respond to any OMB or public comments on the information collection requirements contained in the proposal.

C. Regulatory Flexibility Act

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

For the purposes of assessing the impacts of today's proposed amendments on small entities, small entity is defined as: (1) a small business having no more than 1,000 employees, as defined by the Small Business Administration for NAICS codes 331111 and 324199; (2) a government 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 proposed amendments on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. Of the five companies subject to the requirements of the proposed amendments, one company (operating a total of three batteries) is considered a small entity. However, the proposed amendments will not impose any significant additional regulatory costs on that small entity because it is already meeting the stricter emissions limitations for by-product coke oven batteries included in the proposed rule amendments, as well as the monitoring, recordkeeping, and reporting requirements.

Although the proposed 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 proposed amendments on small entities. We held meetings with industry trade associations and company representatives to discuss the proposed amendments and have included provisions that address their concerns. We continue to be interested in the potential impacts of the proposed amendments on small entities and welcome comments on issues related to such impacts.

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.

The EPA has determined that the proposed 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 proposed amendments. Thus, the proposed amendments are not subject to the requirements of sections 202 and 205 of the UMRA. In addition, the proposed 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 proposed 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 proposed 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 proposed 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 proposed 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 proposed 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.

The proposed amendments are not subject to the Executive Order because they are not economically significant as defined in Executive Order 12866 and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. The public is invited to submit or identify peer-reviewed studies and data, of which the Agency may not be aware, that assessed results of early life exposure to coke oven emissions.

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

The proposed 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 believe that the proposed 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 (Public Law No. 104-113; 15 U.S.C 272 note) directs the EPA to use voluntary consensus

standards in their regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impracticable. Voluntary consensus standards 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 voluntary consensus standards.

These proposed amendments involve technical standards. The EPA proposes to 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 voluntary consensus standards in addition to these EPA methods. No applicable voluntary consensus standards were identified for EPA Methods 2F, 2G, 5D, and 9. One voluntary consensus standard was identified as an acceptable alternative to EPA test methods for the purposes of the proposed amendments. The voluntary consensus standard ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," is cited in the proposed 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 14 voluntary consensus standards applicable to the proposed amendments. The EPA determined that 12 of these standards 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 voluntary consensus standards 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 does not intend to adopt these standards for this purpose. Detailed information on the EPA's search and review results is included in the docket.

Section 63.309 of the proposed amendments lists the EPA test methods that would be 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.

**National Emission Standards for Coke Oven Batteries:
Proposed Amendments
- page 97 of 114**

List of Subjects in 40 CFR Part 63

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

Dated:

Michael O. Leavitt,
Administrator.

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

PART 63--[AMENDED]

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

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

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), 63.685(b), 63.3360(e)(1)(iii), 63.4166(a)(3), 63.4965(a)(3), and 63.5160(d)(1)(iii).

* * * * *

Subpart L--[Amended]

3. Section 63.300 is amended by:

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).

The additions read as follows:

§63.300 Applicability.

(a) * * *

(3) [date 90 days after publication of the final rule amendments in the Federal Register], for existing by-product coke oven batteries subject to emission limitations in §63.302(a)(3) and for non-recovery coke oven batteries subject to the emission limitations and requirements in §63.303(b)(3) or (c);

(4) Upon startup for a new non-recovery coke oven battery subject to the emission limitations and requirements in §63.303(b), (c), and (d). A new non-recovery coke oven battery subject to the requirements in §63.303(d) is one for which construction or reconstruction commenced on or after [insert date of publication in the Federal Register];

* * * * *

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 [date 90 days after publication of the final rule amendments in the Federal Register];

(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 by:

a. Redesignating paragraphs (b)(3) and (b)(4) as (b)(4) and (b)(5) and adding new paragraph (b)(3); and

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

The additions read as follows:

§63.303 Standards for non-recovery 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 non-recovery 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) For no more than two times per battery in any semiannual reporting period, 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.

(ii) The limit of two occurrences per battery specified in paragraph (c)(2)(i) of this section does not apply 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 non-recovery 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 during each day of operation 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 non-recovery 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 block 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 five 3-minute block averages.

(k) The owner or operator of a new non-recovery 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 non-recovery 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 non-recovery 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 by:

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).

The revisions and additions read as follows:

§63.311 Reporting and recordkeeping requirements.

* * * * *

(b) Initial compliance certification. * * *

(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 non-recovery 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 non-recovery coke oven battery have been met.

(c) Notifications. * * *

(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 non-recovery 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) Semiannual compliance report. * * *

(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 non-recovery 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 non-recovery 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 non-recovery 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 non-recovery coke oven battery conducted during the reporting period as required in §63.309(1).

(8) Certification, signed by the owner or operator, that all work practices for a charging emissions control device for a new non-recovery coke oven battery were implemented as required in §63.303(d)(3). If a Method 9 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 non-

recovery coke oven battery were implemented as required in §63.303(d)(4).

* * * * *

(f) Recordkeeping. * * *

(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 non-recovery 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).

* * * * *