ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[OAR–2002–0017; FRL–7551–5]

RIN 2060–AE85

National Emission Standards for Hazardous Air Pollutants: Mercury Emissions From Mercury Cell Chlor-Alkali Plants

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates national emission standards for hazardous air pollutants (NESHAP), specifically mercury emissions, from mercury cell chlor-alkali plants. The final rule will limit mercury air emissions from these plants. The final rule will implement section 112(d) of the Clean Air Act (CAA) which requires all categories and subcategories of major sources and area sources listed under section 112(c) to meet hazardous air pollutant emission standards reflecting the application of the maximum achievable control technology (MACT). Mercury cell chlor-alkali plants are a subcategory of the chlorine production source category listed under the authority of section 112(c)(1) of the CAA. The chlorine production source category was also identified as a source of mercury under section 112(c)(6) that must be subjected to standards. In addition, mercury cell chlor-alkali plants were listed as an area source category under section 112(c)(3) and (k)(3)(B) of the CAA. The final rule, which will satisfy our requirement to issue 112(d) regulations under each of these listings (for mercury), will reduce mercury emissions by about 3,068 kilograms per year from the levels allowed by the existing Mercury NESHAP.

Mercury is a neurotoxicant that accumulates, primarily in the especially potent form of methylmercury, in aquatic food chains. The highest levels are reached in predator fish species. Mercury emitted to the air from various types of sources (usually in the elemental or inorganic forms) transports through the atmosphere and eventually deposits onto land or water bodies. When mercury is deposited to surface waters, natural processes (bacterial) can transform some of the mercury into methylmercury that accumulates in fish. Ingestion is the primary exposure route of interest for methylmercury. The health effect of greatest concern due to methylmercury is neurotoxicity, particularly with respect to fetuses and young children.

In addition, in this final action, we are utilizing our authority under section 112(d)(4) of the CAA not to regulation chlorine and hydrochloric acid (HCl) emissions from the mercury cell chlor-alkali plant subcategory.

EFFECTIVE DATE: December 19, 2003.

ADDRESSES: *Docket.* We have established an official public docket for this action under Docket ID No. OAR–2002–0017, A–2000–32, A–2002–09, and OAR–2002–0016 available for public viewing at the Office of Air and Radiation Docket and Information Center (Air Docket) in the EPA Docket Center, (EPA/DC) EPA West, Room B102, 1301 Constitution Avenue, NW., Washington, DC.

FOR FURTHER INFORMATION CONTACT: For information concerning applicability and rule determinations, contact your State or local regulatory agency representative or the appropriate EPA Regional Office representative. For information concerning analyses performed in developing the final rule, contact Mr. Iliam Rosario, Metals Group, Emission Standards Division (C439–02), U.S. EPA, Research Triangle Park, North Carolina 27711; telephone number (919) 541–5308; fax number (919) 541–5600; electronic mail address: *rosario.iliam@epa.gov.*

SUPPLEMENTARY INFORMATION: *Docket.* The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. Although a part of the official docket, the public docket does not include Confidential Business Information or other information whose disclosure is restricted by statute.

The official public docket is the collection of materials that is available for public viewing. The EPA Docket Center 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 Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566–1742.

Electronic Docket Access. You may access the final rule electronically through the EPA Internet under the **Federal Register** listings at *http://www.epa.gov/fedrgstr/.*

An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at *http://www.epa.gov/edocket/* to view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility in the above paragraph entitled ''Docket.'' Once in the system, select ''search,'' then key in the appropriate docket identification number.

Judicial Review. Under CAA section 307(b), judicial review of the final NESHAP is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit on or before February 17, 2004. Only those objections to the NESHAP which were raised with reasonable specificity during the period for public comment may be raised during judicial review. Under section 307(b)(2)of the CAA, the requirements established by today's final action may not be challenged separately in any civil or criminal proceeding we bring to enforce these requirements.

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

Category	SIC [1]	NAICS [2]	Regulated entities
Industry	2812	325181	Alkalies and Chlorine Manufacturing.

[1] Standard Industrial Classification.

[2] North American Information Classification System.

This list is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility is regulated by this action, you should examine the applicability criteria in § 63.8182 of the final rule. If you have questions regarding the applicability of this action to a particular entity, consult your State or local agency (or EPA Regional Office) described in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of the final rule will also be available on the WWW through the Technology Transfer Network (TTN). Following signature, a copy of the final rule will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules *http://www.epa.gov/ttn/oarpg.*

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

I. Introduction and Background

A. What Is the Source of Authority for Development of NESHAP?

Section 112 of the CAA contains our authorities for reducing emissions of hazardous air pollutants (HAP). Section 112(c)(1) of the CAA requires us to list categories and subcategories of major sources and area sources of HAP and to establish NESHAP for the listed source categories and subcategories. Section 112(c)(6) requires us to list source categories and subcategories assuring that sources accounting for not less than 90 percent of the aggregate emissions of each of seven specific pollutants (including mercury) are subject to standards under section 112(d) of the CAA. Finally, section 112(c)(3) and (k)(3)(B) require that we list source categories to ensure that area sources representing 90 percent of the area source emissions of the 30 urban HAP are subject to regulation under section 112(d).

B. What Is the Source Category?

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

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

In our subsequent analysis of the chlorine production source category, we did not identify any facilities that produce chlorine using hybrid fuel cells, the nitrosyl chloride process, the Kel-Chlor process, the sodium chloride/sulfuric acid process, or as a by-product from potash manufacturing. The majority of the source category is made up of chlor-alkali plants that produce chlorine and caustic (sodium hydroxide) using mercury cells, diaphragm cells, or membrane cells. We also identified operating plants that produce chlorine as a by-product: one from the production of sodium metal in Down cells, another from the production of potassium nitrate fertilizer that uses the nitric acid/salt process, and a third that produces chlorine as a by-product from primary magnesium refining (magnesium refining is a separately listed source category and will be addressed on its own in a separate rulemaking). In addition, at a site where a membrane cell process is located, we have also identified a process that produces chlorine through the decomposition of HCl. Our analysis shows that the only HAP emitted from sources within this chlorine production source category are chlorine, HCl, and mercury; and mercury is only emitted from mercury cell chlor-alkali plants.

In addition to the listing pursuant to section 112(c)(1), chlor-alkali production was among the categories of sources identified pursuant to section 112(c)(6) to achieve the 90 percent goal for mercury. While this category was titled "chlor-alkali production," the only sources of mercury emissions are mercury cell chlor-alkali plants. However, the mercury cell chlor-alkali subcategory was not officially "listed" under section 112(c)(6) because the chlorine production source category was already listed under section 112(c)(1), and sources of mercury emissions at mercury cell chlor-alkali plants would be subject to section 112(d)(2) standards via that chlorine production source category listing.

Finally, on July 19, 1999 (64 FR 38706), we listed Mercury Cell Chlor-Alkali Plants as an area source category. In this listing, Mercury Cell Chlor-Alkali Plants were identified as one of the area source categories that contribute at least 15 percent of the total area source mercury emissions.

Because of the differences in the production methods and the HAP emitted, we decided to divide the chlorine production category into two subcategories: (1) Mercury cell chlor-alkali plants, and (2) chlorine production plants that do not rely upon mercury cells for chlorine production (diaphragm cell chlor-alkali plants, membrane cell chlor-alkali plants, *etc.*). Thus, on July 3, 2002, we issued separate proposals to address the emissions of mercury from the mercury cell chlor-alkali plant subcategory sources (67 FR 44672) and the emissions of chlorine and HCl from both non-mercury cell chlorine production subcategory sources and mercury chlor-alkali plant subcategory sources (67 FR 44713).

C. What Criteria Are Used in the Development of NESHAP?

Section 112(d)(2) of the CAA specifies that NESHAP for new and existing sources must reflect the maximum degree of reduction in HAP emissions that is achievable, taking into consideration the cost of achieving the emissions reductions, any non-air quality health and environmental benefits, and energy requirements. This level of control is commonly referred to as MACT.

Section 112(d)(3) defines the minimum level of control or floor allowed for NESHAP. In essence, the MACT floor ensures that the standards are set at a level that assures that all affected sources achieve the level of control at least as stringent as that already achieved by the better-controlled and lower-emitting sources in each source category or subcategory. For new sources, the MACT floor cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. The MACT standards for existing sources cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources).

In developing MACT, we also consider control options that are more stringent than the floor. We may establish standards more stringent than the floor based on the consideration of cost of achieving the emissions reductions, any non-air quality health and environmental impacts, and energy impacts.

The CAA includes exceptions to the general statutory requirement to establish emission standards based on MACT. For pollutants for which a threshold has been established, section 112(d)(4) allows us ‘‘to consider such threshold level, with an ample margin of safety, when establishing emissions standards. * * *.’’

D. What Actions Were Proposed for This Source Category?

As discussed above, we divided the chlorine production source category into mercury cell chlor-alkali plants, and chlorine production plants that do not rely upon mercury cells for chlorine production (non-mercury cell chlorine production). On July 3, 2002, we proposed one action to address mercury emissions from the mercury cell chlor-alkali plant subcategory, and a separate action to address chlorine and HCl emissions from both subcategories.

For mercury emissions from mercury cell chlor-alkali plant subcategory sources, we issued a proposed rule based on MACT (67 FR 44672). Comments were received on the proposed rule and today's action issues the final rule for the mercury emissions from the mercury cell chlor-alkali plant subcategory.

We also proposed not to regulate chlorine and HCl emissions from both the mercury cell chlor-alkali plant and non-mercury cell chlorine production subcategories under our authority in section 112(d)(4) of the CAA (67 FR 44713). We based this decision on our determination that no further control is necessary because chlorine and HCl are ‘‘health threshold pollutants,’’ and chlorine and HCl levels emitted from chlorine production processes are below their threshold values within an ample margin of safety. The basis for the determination was a series of site-specific risk assessments for every chlorine production facility in the United States that was located at a major source plant site. In addition, we concluded, using a qualitative evaluation, that chlorine and HCl emissions from these chlorine production facilities did not result in adverse environmental effects. Background for this action is contained in Docket OAR–2002–0016 or Docket A–2002–09. Public comments on the proposed action were received, and we are finalizing actions addressing chlorine and HCl emissions in today's **Federal Register**. In today's final action, we are utilizing our authority under section 112(d)(4) not to regulate chlorine and HCl emissions from the mercury cell chlor-alkali plant subcategory. Final action addressing the emissions of chlorine and HCl from the non-mercury cell chlorine production subcategory is contained elsewhere in today's **Federal Register**.

E. How Did the Public Participate in Developing the Rulemaking?

Prior to proposal, we met with industry representatives and State regulatory authorities several times to discuss the data and information used to develop the proposed standards. In addition, these and other potential stakeholders, including equipment vendors and environmental groups, had opportunity to comment on the proposed standards.

The proposed rule was published in the **Federal Register** on July 3, 2002 (67 FR 44672). The preamble to the proposed rule discussed the availability of technical support documents, which described in detail the information gathered during the standards development process. Public comments were solicited at proposal.

We received nine public comment letters on the proposed rule (two of which were received well after the close of the comment period). The commenters represent the following affiliations: Mercury cell chlor-alkali companies, industrial trade associations, environmental/conservation organizations, and a women's advocacy organization. In the post-proposal period, we talked with commenters and other stakeholders to clarify comments and to assist in our analysis of the comments. Records of these contacts are found in Docket OAR–2002–0017 or Docket A–2000–32. All of the comments have been carefully considered, and, where appropriate, the final rule has been written to so reflect.

The proposed action not to regulate chlorine and HCl emissions was published in the **Federal Register** on July 3, 2002 (67 FR 44713). The preamble to the proposed action discussed the availability of technical support documents, which described in detail the information gathered during the standards development process. Public comments were solicited at proposal.

We received eight public comment letters on the proposed action. The commenters represent the following affiliations: Industry representatives, governmental entities, and environmental groups. In the post-proposal period, we talked with commenters and other stakeholders to clarify comments and to assist in our analysis of the comments. Records of these contacts are found in Docket OAR–2002–0016 or Docket A–2002–09. All of the comments have been carefully considered.

F. What Is a Mercury Cell Chlor-alkali Plant?

Today's NESHAP apply to mercury emissions from mercury cell chlor-alkali plants. Mercury cells are considerably larger than other types of chlor-alkali cells. A mercury cell plant typically has scores of individual cells (around 60 feet long and 9 feet wide) housed in one or more cell buildings. Mercury cells are electrically connected together in series with circuits of 30 or more cells.

In the mercury cell process, each cell actually involves two distinct operations. The electrolytic cell produces chlorine gas, and a separate decomposer produces hydrogen gas and caustic solution. There is one decomposer associated with each cell, located directly underneath the cell. The cell and the decomposer are linked at the two ends by an inlet end box and an outlet end box.

A stream of liquid mercury flows in a continuous loop between the electrolytic cell and the decomposer. The mercury enters the cell at the inlet end box and flows down a slight grade to the outlet end box. At the outlet end box, the mercury flows out of the cell and falls down to the decomposer. After being processed in the decomposer, the mercury is pumped back up to the inlet end box of the electrolytic cell.

Saturated salt brine (using either sodium chloride or potassium chloride) is fed to the electrolytic cell at the inlet end box and flows toward the outlet end box on top of the mercury stream. The brine and mercury flow under a dimensionally stable metal anode made of a titanium substrate with a metal catalyst. The mercury forms the cathode of the cell.

An electric current is applied between the anode and the mercury cathode. The electric current causes a reaction producing chlorine gas at the anode and a mercury:sodium (HgNa) or mercury:potassium (HgK) amalgam at the cathode. Chlorine is collected at the top of the cell. The amalgam ultimately exits at the outlet end box, falling into the decomposer. Depleted brine also exits the cell at the outlet end box. This brine is generally piped to a tank for resaturation and reuse.

The decomposer is a packed bed reactor where the mercury amalgam is contacted with deionized water in the presence of a catalyst. The amalgam reacts with the water, regenerating elemental mercury and producing caustic (NaOH or KOH) and hydrogen. The caustic and mercury are separated in a trap at the end of the decomposer. The caustic and hydrogen are transferred to auxiliary processes for purification, and the mercury is recycled back to the cell.

Chlorine is collected from the tops of the mercury cells by a common header system which runs through the cell building. Hydrogen is collected from the amalgam decomposers in a common header system. The hydrogen stream contains a small amount of mercury vapor from the liquid mercury processed in the decomposer. To remove the mercury vapor, the hydrogen stream is typically cooled, passed through a mist eliminator, and usually sent to a finishing device such as a carbon adsorber. The hydrogen may then be discharged to the atmosphere, used on-site, or sold for use off-site.

In a mercury cell process, a 50 percent caustic solution is obtained directly from the amalgam decomposers. Thus, the mercury cell caustic requires little further processing to yield a commercial product.

Contaminated mercury and mercury-containing wastes are generated from a number of sources at a mercury cell plant. These include the hydrogen treatment operation, the brine and caustic treatment operations, and mercury leaks or spills. Many plants recover mercury from these wastes on-site in a mercury retort, or mercury thermal recovery unit.

Mercury is emitted from two point sources associated with the production of chlorine—the end box ventilation system and by-product hydrogen system. Mercury is also emitted from mercury thermal recovery units, which is also a point source. In addition, there are mercury fugitive emissions from the cell rooms and from the waste recovery areas.

In addition to mercury, chlorine and HCl are emitted from mercury cell plants. Chlorine can be emitted from the tail gas stream from the final liquefier, the cell room, and equipment in chlorine service. Hydrochloric acid is used to pretreat feed brine prior to entering a chlor-alkali cell, and at other locations throughout the process to adjust pH. It can also be emitted from storage tanks and equipment in HCl service.

G. How Does This Action Relate to the 40 CFR Part 61 Mercury NESHAP?

We promulgated the National Emission Standard for Mercury on April 6, 1973 (40 CFR part 61, subpart E).[1] Those standards (hereafter referred to as the Mercury NESHAP) limit mercury emissions from mercury cell chlor-alkali plants as well as mercury ore processing facilities and sludge incineration and drying plants. Specifically, the Mercury NESHAP limit mercury emissions from mercury cell chlor-alkali plants to 2.3 kilogram (kg) (5.1 pound (lb)) of mercury per 24-hour period and requires that mercury emissions be measured (in a one-time test) from hydrogen streams, end box ventilation systems, and the cell room ventilation system. As an alternative to measuring ventilation emissions from the cell room to demonstrate compliance, the Mercury NESHAP allow an owner or operator to assume a cell room ventilation emission value of 1.3 kg (2.9 lb) per day of mercury providing the owner/operator adheres to a suite of approved design, maintenance and housekeeping practices. Every mercury cell chlor-alkali plant currently in operation in the United States complies with the cell room ventilation provisions by carrying out these practices rather than by measuring mercury emissions discharged from the cell room. Since every plant uses the 1.3 kg per day assumed value for its cell room ventilation emissions, subtracting the 1.3 kg per day cell room value from the 2.3 kg per 24-hour period plantwide standard effectively creates an emission limit for the combined emissions from hydrogen streams and end box ventilation systems of 1.0 kg per day (1,000 grams per day).

The requirements in today's final standards are more stringent than the requirements in the Mercury NESHAP. Using the 1,000 grams per day value as the baseline, we estimate that mercury emissions will be reduced to less than 60 grams per day (on average) by the final rule. This represents about 94 percent reduction from the Mercury NESHAP baseline for vents. In addition, the work practice standards in today's final rule represent the most explicit compilation of practices currently employed by the industry, along with detailed recordkeeping and reporting requirements. While we cannot quantify the mercury emissions reductions that would be achieved by the final work practice standards, we are confident that their implementation would result in additional reductions in mercury emissions beyond that currently achieved by the existing Mercury NESHAP.

Every aspect of the Mercury NESHAP that applies to mercury cell chlor-alkali plants is addressed in today's final rule (40 CFR part 63, subpart IIIII). In fact, as discussed above, the requirements are more stringent than the respective requirements in the Mercury NESHAP. Consequently, when mercury cell chlor-alkali plants are required to comply with the final rule, the requirements of the Mercury NESHAP that apply to them will no longer be relevant or applicable. Therefore, upon the compliance date as indicated in § 63.8186 of the final rule, mercury cell chlor-alkali plants will no longer have any obligation to comply with the Mercury NESHAP, nor will they be allowed to comply with the Mercury NESHAP instead of the applicable provisions in 40 CFR part 63, subpart IIIII. Specifically, affected sources

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[1] This regulatory program was originally set forth at 38 FR 8826; April 6, 1973; and amended at 40 FR 48302, October 14, 1975; 47 FR 24704, June 8, 1982; 49 FR 35770, September 12, 1984; 50 FR 46294, November 7, 1985; 52 FR 8726, March 19, 1987; and 53 FR 36972, September 23, 1988.

subject to the final rule would no longer be subject to §§ 61.52(a), 61.53(b) and (c), and 61.55(b), (c) and (d) of 40 CFR part 61, subpart E, after the compliance date, which is December 19, 2006.

II. Summary of Changes Since Proposal

The proposed rule contained a compliance date 2 years from the date that the final rule would appear in the **Federal Register**. In the final rule, the compliance date has been changed to 3 years from December 19, 2006. However, unlike the proposed rule, which would have required that performance tests be conducted within 180 days after the compliance date, the final rule requires that all performance tests be conducted on or before the compliance date.

For mercury cell chlor-alkali production facilities affected sources, the proposed rule included a single emission limitation that covered all mercury emissions from the two point sources associated with chlorine production in mercury cells: the by-product hydrogen stream and the end box ventilation system vent. The format of this limitation was total grams of mercury per Megagram of chlorine production (g Hg/Mg Cl_2). For the initial compliance determination, the aggregate mercury emissions from all hydrogen by-product streams and all end box ventilation system vents were divided by the chlorine production for the same period and compared with the applicable emission limitation. Continuous compliance would have then been demonstrated by continuously monitoring the mercury concentration in each stream and comparing the daily average mercury concentration against a level determined during the initial compliance test. Commenters objected to this daily averaging period for compliance purposes when the emission limitations were based on annual average emissions and chlorine production. In response to these comments, we have written the averaging time for continuous compliance as a 52-week period. Further, as discussed more below, rather than establishing surrogate mercury concentration operating limits for each vent, continuous compliance is determined by a direct comparison of the emissions per unit of chlorine production (g Hg/Mg Cl_2) for each 52-week compliance period and the emission limitation. This is a rolling average compliance period that is determined each week. That means a compliance determination is required each week for the previous 52-week period.

In addition to the averaging time for the by-product hydrogen/end box ventilation system vent, we changed the value of the emission limitation for plants with end box ventilation systems from the proposed limit of 0.067 g Hg/Mg Cl_2 to 0.076 g Hg/Mg Cl_2. The proposed limit of 0.033 g Hg/Mg Cl_2 for plants without end box ventilation systems is retained in the final rule.

In the final rule, we have written the method for determining continuous compliance for the point sources of emissions in both types of affected sources covered by the rule (by-product hydrogen streams and end box ventilation system vents at mercury cell chlor-alkali production facilities and mercury thermal recovery unit vents at mercury recovery facilities). In the proposed rule, performance tests would have been required to determine initial compliance with the applicable emission limitation. The proposed rule also would have required that the mercury concentration of each vent be monitored during these performance tests, and that a mercury concentration operating limit be established for each vent based on the monitoring results obtained during the test. Compliance with the emission limitation would have then been determined by comparing the results of the continuous monitoring of mercury concentration against the established operating limits. There were several comments received on this approach.

In response to these comments, continuous compliance in the final rule is determined via a direct comparison of emissions to the emission limitation rather than using mercury concentration operating limits as a surrogate. For by-product hydrogen streams and end box ventilation system vents, the aggregate mercury emissions will be determined, divided by the corresponding chlorine production, and compared with the emission limitation for each 52-week compliance period (as discussed above). For mercury thermal recovery unit vents, the measured mercury concentration will be directly compared against the emission limitations (which are in units of milligrams of mercury per dry standard cubic meter, or mg/dscm). Also, the final rule contains two options for measuring the mercury emissions for continuous compliance: Continuous mercury emission monitoring systems, and periodic sampling using EPA reference methods or approved alternative methods.

The proposed work practice provisions included a cell room monitoring program, which would have required that the mercury concentration be monitored in the cell room and corrective action taken when a plant-specific action level was exceeded. The final rule retains the cell room monitoring program, but it is as an alternative to the work practices. The optional cell room monitoring provisions in the final rule are more detailed and prescriptive than the requirements in the proposed rule, and the final rule requires the preparation and submittal of site-specific cell room monitoring plans. Since the cell room monitoring program was made optional, the final rule requires (if optional cell room monitoring is not chosen) the owner or operator to institute a floor-level mercury vapor measurement program. This program is designed to limit the amount of mercury vapor in the cell room environment through periodic measurement of mercury vapor levels.

The final rule also requires that the owner of each mercury cell chlor-alkali plant report the mass of virgin mercury added to the cells. Initial compliance with this requirement is demonstrated by reporting the mass of mercury added to cells for the 5 years preceding the compliance date. This is a requirement requested by commenters.

III. Summary of the Final Rule

A. What Is the Source Category?

The chlorine production source category contains the mercury cell chlor-alkali plant subcategory and includes all plants engaged in the manufacture of chlorine and caustic in mercury cells. Other non-mercury cell chlorine production plants used to produce chlorine and caustic, such as diaphragm cell and membrane cell technologies, are not covered by the final rule.

B. What Are the Affected Sources and Emission Points To Be Regulated?

The final rule defines two affected sources: Mercury cell chlor-alkali production facilities, and mercury recovery facilities. The former includes all cell rooms and ancillary operations used in the manufacture of chlorine, caustic, and by-product hydrogen at a plant site. The latter includes all processes and associated operations needed for mercury recovery from wastes.

Emission points addressed within mercury cell chlor-alkali production facilities include each mercury cell by-product hydrogen stream, each mercury cell end box ventilation system vent, and fugitive emission sources throughout each cell room and various areas. Emission points addressed within mercury recovery facilities include each mercury thermal recovery unit vent and fugitive emission sources associated with storage areas for mercury-containing wastes.

C. What Are the Emission Limitations?

For new or reconstructed mercury cell chlor-alkali production facilities, the final rule prohibits mercury emissions.

For existing mercury cell chlor-alkali production facilities with end box ventilation systems, the final rule requires that aggregate mercury emissions from all by-product hydrogen streams and end box ventilation system vents not exceed 0.076 g Hg/Mg Cl_2 for any consecutive 52-week period. For existing mercury cell chlor-alkali production facilities without end box ventilation systems, the final rule requires that mercury emissions from all by-product hydrogen streams not exceed 0.033 g Hg/Mg Cl_2 for any consecutive 52-week period.

For new, reconstructed, or existing mercury recovery facilities with oven type mercury thermal recovery units, the final rule requires that total mercury emissions not exceed 23 mg/dscm from each oven type unit vent. For new, reconstructed, or existing mercury recovery facilities with non-oven type mercury thermal recovery units, the limit in the final rule is 4 mg/dscm.

D. What Are the Work Practice Standards?

The final rule contains a set of work practice standards to address and mitigate fugitive mercury releases at mercury cell chlor-alkali plants. These provisions include specific equipment standards such as the requirement that end boxes either be closed (that is, equipped with fixed covers), or that end box headspaces be routed to a ventilation system. Other examples include requirements that piping in liquid mercury service have smooth interiors, that cell room floors be free of cracks and spalling (*i.e.*, fragmentation by chipping) and coated with a material that resists mercury absorption, and that containers used to store liquid mercury have tight-fitting lids. The work practice standards also include operational requirements. Examples of these include requirements to allow electrolyzers and decomposers to cool before opening, to keep liquid mercury in end boxes and mercury pumps covered by an aqueous liquid at a temperature below its boiling point at all times, to maintain end box access port stoppers in good sealing condition, and to rinse all parts removed from the decomposer for maintenance prior to transport to another work area.

A cornerstone of the work practice standards is the inspection program for equipment problems, leaking equipment, liquid mercury accumulations and spills, and cracks or spalling in floors and pillars and beams. Specifically, the final rule requires that visual inspections be conducted twice each day to detect equipment problems, such as end box access port stoppers not securely in place, liquid mercury in open containers not covered by an aqueous liquid, or leaking vent hoses. If a problem is found during an inspection, the owner or operator will need to take immediate action to correct the problem. Monthly inspections for cracking or spalling in cell room floors are also required as well as semiannual inspections for cracks and spalling on pillars and beams. Any cracks or spalling found will need to be corrected within 1 month.

Visual inspections for liquid mercury spills or accumulations are also required twice per day. If a liquid mercury spill or accumulation is identified during an inspection, the owner or operator will need to initiate cleanup of the liquid mercury within 1 hour of its detection. Acceptable cleanup methods include wet vacuum cleaning or a suitable alternative method approved upon petition.

In addition to cleanup, the final rule requires that an inspection of equipment in the area of the spill or accumulation be conducted to identify the source of the liquid mercury. If the source is found, the owner or operator is required to repair the leaking equipment as discussed below. If the source is not found, the owner or operator will be required to reinspect the area every 6 hours until the source is identified or until no additional liquid mercury is found at that location.

Inspections of specific equipment for liquid mercury leaks are required once per day. If leaking equipment is identified, the final rule requires that any dripping mercury be contained and covered by an aqueous liquid, and that a first attempt to repair leaking equipment be made within 1 hour of the time it is identified. The final rule requires that leaking equipment be repaired within 4 hours of the time it is identified, although there are provisions for delaying repair of leaking equipment for up to 48 hours.

Inspections for hydrogen gas leaks are required twice per day. For a hydrogen leak at any location upstream of a hydrogen header, a first attempt at repair is required within 1 hour of detection of the leaking equipment, and the leaking equipment is required to be repaired within 4 hours (with provisions for delay of repair if the leaking equipment is isolated). For a hydrogen leak downstream of the hydrogen header but upstream of the final control device, a first attempt at repair is required within 4 hours, and complete repair required within 24 hours (with delay provisions if the header is isolated).

The work practice standards in the final rule require you to institute a floor-level mercury vapor measurement program. Under this program, mercury vapor levels are periodically measured and compared to an action level of 0.05 mg/m^3. The final rule specifies the actions to be taken when the action level is exceeded. If the action level is exceeded during any floor-level mercury vapor measurement evaluation, you are required to take specific actions to identify and correct the problem.

As an alternative to the full set of work practice standards (including the floor-level monitoring program), the final rule also includes an optional requirement to institute a cell room monitoring program whereby owners and operators continuously monitor mercury concentrations in the upper portion of each cell room and take corrective actions as soon as practicable when elevated mercury vapor levels are detected.

The program is not designed to be a continuous monitoring system inasmuch as the results would be used only to determine relative changes in mercury vapor levels rather than compliance with a cell room emission or operating limit. The owner or operator is required to establish an action level for each cell room based on preliminary monitoring to determine normal baseline conditions. The action level, or levels if appropriate, will then be established as a yet-to-be-determined multiple of the baseline values. Once the action level(s) is established, continuous monitoring must be conducted. If an action level is exceeded, actions to correct the situation are required to be initiated as soon as possible. If the elevated mercury vapor level is due to a maintenance activity, the owner or operator must ensure that all work practices related to that maintenance activity are followed. If a maintenance activity is not the cause, inspections and other actions will be needed to identify and correct the cause of the elevated mercury vapor level. Owners and operators utilizing this cell room monitoring program option are required to develop site-specific cell room monitoring plans describing their monitoring system and quality assurance/quality control procedures that will be used, along with their action level.

The final rule establishes the duty for owners and operators to routinely wash surfaces throughout the plant where liquid mercury could accumulate. Owners and operators are required to prepare and follow a written washdown plan detailing how and how often specific areas specified in the final rule are to be washed down to remove any accumulations of liquid mercury.

Finally, the final rule requires owners or operators to record and report the mass of virgin mercury added to cells. Virgin mercury is defined as mercury that has not been processed in an onsite mercury thermal recovery unit or otherwise recovered from mercury-containing wastes onsite. In order to establish a baseline of mercury being added to the cells, the final rule requires owners or operators to submit the mass of virgin mercury added to cells for the 5 years preceding the compliance date.

E. What Are the Operation and Maintenance Requirements?

The final rule requires that each owner and operator always operate and maintain each affected source, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing air emissions, as required under 40 CFR 63.6(e)(1)(i) of the NESHAP General Provisions. The final rule requires each owner and operator to prepare and implement a written startup, shutdown, and malfunction plan according to the operation and maintenance requirements in § 63.6(e)(3) of the NESHAP General Provisions.

F. What Are the General Compliance Requirements?

The final rule requires compliance with the emission limitations and applicable work practice requirements at all times, except during periods or startup, shutdown, and malfunction as defined in 40 CFR 63.2. The owner or operator must develop and implement a written startup, shutdown, and malfunction plan according to the requirements in 40 CFR 63.6(e)(3).

G. What Are the Initial Compliance Requirements?

The final rule requires compliance with emission limitations and work practices by December 19, 2006.

To demonstrate initial compliance with the emission limits for by-product hydrogen streams and end box ventilation system vents, the final rule requires each owner or operator to conduct performance tests using 40 CFR part 61, appendix A, Method 102 for by-product hydrogen streams, and 40 CFR part 61, appendix A, Method 101 or 101A for end box ventilation system vents. In addition, the final rule also includes procedures for reducing the mercury emissions data collected during the performance test to units of the standard (*i.e.*, g Hg/Mg Cl_2). Each performance test is required to consist of a minimum of three 2-hour runs with a minimum sample volume of 1.7 dscm and must be conducted in accordance with a site-specific test plan prepared according to the performance test quality assurance program requirements in § 63.7(c)(2) of the NESHAP General Provisions.

Concurrent with each test run, each owner or operator is required to determine the quantity of chlorine produced using an equation contained in the final rule which calculates chlorine production based on cell line electric current load.

Initial compliance is demonstrated by showing that the total mercury emission rate from all by-product hydrogen streams and all end box ventilation system vents for the test are less than 0.076 g Hg/Mg Cl_2 for plants with end box ventilation systems, or 0.033 g Hg/Mg Cl_2 for plants without end box ventilation systems.

In addition, if the final control device is not a nonregenerable carbon adsorber and continuous compliance will be demonstrated using the periodic monitoring option, the owner or operator is required to monitor the following parameters during the performance test to establish either a maximum or minimum monitoring value, as applicable for the control device:

- Exit gas temperature from uncontrolled streams;
- Outlet temperature of the gas stream for the final cooling system when no control devices other than coolers or demisters are used;
- The outlet temperature of the gas stream from the final cooling system when the cooling system is followed by a molecular sieve or regenerative carbon adsorber;
- Outlet concentration of available chlorine, pH, liquid flow rate, and inlet gas temperature of chlorinated brine scrubbers and hypochlorite scrubbers;
- The liquid flow rate and exit gas temperature for water scrubbers;
- The inlet gas temperature of regenerative carbon adsorption systems; or
- The temperature during the heating phase of the regeneration cycle for regenerative carbon adsorbers or molecular sieves.

As part of the initial compliance demonstration, the owner or operator must determine the maximum or minimum monitoring value by calculating the average of the data collected during the performance test. The exception to this is when the final control device is a regenerative carbon adsorber. In this case, the highest temperature reading during the performance test must be used.

To demonstrate initial compliance with the mercury thermal recovery unit emission limits, the final rule requires that owners or operators conduct a performance test for each vent using 40 CFR part 61, appendix A, Method 101 or 101A. The owner or operator is required to develop and follow a site-specific test plan according to § 63.7(c)(2) of the NESHAP General Provisions. Three test runs would need to be conducted at a point after the last control device for each vent.

Initial compliance is achieved if the average vent mercury concentration is less than 23 mg/dscm for each oven type vent or 4 mg/dscm for each non-oven type vent. In addition, if the final control device is not a nonregenerable carbon adsorber and continuous compliance will be demonstrated using the periodic monitoring option, the owner or operator is required to monitor the same parameters as required for by-product hydrogen streams and end box ventilation system vents and to establish the appropriate minimum or maximum monitoring value for the control device.

H. What Are the Continuous Compliance Requirements?

The final rule contains two options for continuous compliance with the emission limit for by-product hydrogen streams and end box ventilation system vents and the emission limit for mercury thermal recovery unit vents: Continuous monitoring using mercury continuous emissions monitors, or periodic monitoring using testing. Both of these options will produce results in the units of the standard, so continuous compliance will be demonstrated through a direct comparison of monitoring system results.

If mercury continuous emission monitors are used to comply with the final rule, a site-specific monitoring plan must be developed to ensure proper control device evaluation, and a performance evaluation is required according to the monitoring plan. For each monitor, the final rule requires the site-specific monitoring plan to address installation and siting, monitor performance specifications, performance evaluation procedures and calibration criteria, ongoing operation and maintenance procedures, ongoing data assurance procedures, and ongoing recordkeeping and reporting procedures. It must also address how other parameters (*e.g.*, flow rate) needed to calculate the mass of mercury emissions from each emission point are to be monitored. If periodic weekly monitoring is the selected compliance method, the owner or operator is required to conduct tests on a weekly basis using either an EPA Reference Method (101, 101A, or 102) or an alternative method that has been validated using Method 301, 40 CFR part 63, appendix A. If the final control device is not a nonregenerable carbon adsorber, in addition to periodic testing, the final rule contains requirements for the continuous monitoring of control device-specific parameters.

To demonstrate continuous compliance, the final rule requires the owner or operator to reduce mercury emissions to 52-week averages and to maintain the 52-week average below 0.076 g Hg/Mg Cl_2 for plants with end box ventilation systems, or 0.033 g Hg/Mg Cl_2 for plants without end box ventilation systems. For mercury thermal recovery units, the owner or operator is required to determine daily average mercury emissions and maintain the daily average below 23 mg/dscm for each oven type vent or 4 mg/dscm for each non-oven type vent. The final rule requires the owner or operator to collect emissions data using either a continuous mercury emissions monitor, or by collecting weekly samples using periodic monitoring. If the periodic monitoring option is used and the final control device is not a nonregenerable carbon adsorber, the owner or operator is required to also monitor specific control device parameters and compare to the maximum or minimum monitoring values developed during the performance test. Continuous compliance is achieved if the monitoring values remain either below the maximum monitoring value, or above the minimum monitoring value, as appropriate.

I. How Are Initial and Continuous Compliance With the Work Practice Standards To Be Demonstrated?

The final rule requires compliance with the work practice standards within 3 years from December 19, 2003.

The final rule contains specific recordkeeping requirements related to the work practice standards. These include records of when inspections were conducted, problems identified, and actions taken to correct problems. Continuous compliance with work practice standards will be demonstrated by maintaining these required records.

Initial compliance with the washdown plan will be demonstrated by submission of the plan by the owner or operator and certification that they operate according to, or will operate according to, the plan. Continuous compliance with the plan will be demonstrated by maintaining related records. Records will also be required to demonstrate compliance with the cell room monitoring program.

J. What Are the Notification and Reporting Requirements?

The final rule requires that owners or operators submit Initial Notifications, Notifications of Intent to conduct a performance test, Notification of Compliance Status (NOCS), and compliance reports.

For the Initial Notification, we are requiring that each owner or operator notify us that their plant is subject to the NESHAP for mercury cell chlor-alkali plants, and that they provide other basic information about the plant. For existing sources, this notification would need to be submitted no later than April 19, 2004.

For the Notification of Intent report, we are requiring that each owner or operator notify us in writing of the intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.

The NOCS for the work practice standards will be due 30 days after the compliance date for existing sources. In this notification, the owner or operator will need to certify that the work practice standards are being or will be met. Furthermore, we are requiring that the washdown plan be submitted as part of this notification, and that the owner or operator certify that they operate or will operate according to the plan.

For the emission limits where a performance test is required to demonstrate initial compliance (that is, the emission limits for by-product hydrogen streams and end box ventilation system vents and the mercury thermal recovery unit vent limits), the tests will have to be conducted no later than the compliance date, and the NOCS will be due 60 days after the completion of the performance test. The site-specific monitoring plan addressing the use of mercury continuous emission monitors for vents must be submitted as part of this notification.

Compliance reporting is required semiannually, with the first report due within the first 6 months after initial compliance.

K. What Are the Recordkeeping Requirements?

Records required by the final rule related to by-product hydrogen streams, end box ventilation system vents, and mercury thermal recovery unit vents include the following: Performance test results, records showing the establishment of the applicable mercury concentration operating limits (including records of the mercury concentration monitoring conducted during the performance tests), records of the continuous mercury concentration monitoring data, records of the daily average elemental mercury concentration values, and records associated with site-specific monitoring plans.

With regard to the work practice standards, the final rule requires that records be maintained to document when each required inspection was conducted and the results of each inspection. Records noting equipment problems (such as end box cover stoppers not securely in place or mercury in an open container not covered by an aqueous liquid) identified during a required inspection, and the corrective action taken would also be required. If equipment that is leaking mercury liquid or hydrogen/mercury vapor is identified during a required inspection or at any other time, the final rule requires records of when the leak was identified and when it was repaired. Similarly, if a mercury spill or accumulation is identified at any time, the final rule requires records of when the spill or accumulation was found and when it was cleaned up.

A copy of the current version of the washdown plan would need to be kept on-site and be available for inspection. Records of when washdowns were conducted would be required.

The final rule requires that copies of each notification and report that is submitted to comply with the final rule be kept and maintained for 5 years, the first 2 of which must be on-site.

IV. Summary of Major Comments and Responses

This section includes discussion of significant comments on the proposed rule. For a complete summary of all the comments received on the proposed rule and our responses to them, refer to the ‘‘Background Information Document for Promulgation of National Emissions Standards for Hazardous Air Pollutant (NESHAP): Mercury Emissions From Mercury Cell Chlor-Alkali Plants’’ EPA–453/R–03–012 (hereafter called the ‘‘response to comments document’’) in Docket OAR–2002–0017 or A–2000–32.

The docket also contains the actual comment letters and supporting documentation developed for the final rule.

A. What Issues Were Raised Regarding the Sources That Are Subject to the Rule as Proposed?

There were no issues raised by commenters regarding the sources subject to the proposed rule and the affected source, as a mercury cell chlor-alkali plant is a distinct and easily identifiable entity. There were, however, issues raised regarding the proposed requirement for all affected sources to obtain a title V permit and regarding the specific emission points that were addressed in the proposed rule.

Comment: Three commenters disagreed with the proposed requirements for all mercury cell chlor-alkali plants to obtain a title V permit, including area sources. The commenters requested that this provision be deleted from the final rule. The commenters stated that the facilities affected by the proposal are minor sources of HAP emissions. All three commenters maintained that requiring minor source facilities to obtain title V permits would be burdensome, *e.g.*, due to duplicative recordkeeping and reporting provisions, for the area sources; one commenter further stated that this burden would not yield any environmental benefit. Additionally, according to this commenter, dropping the title V permit requirement for area sources would not lessen any substantive requirements for monitoring, recordkeeping, or operation of any and all air pollution control devices. Commenters noted that the CAA allows EPA to exempt certain sources from obtaining a title V permit ''* * * if the Administrator finds that compliance with such requirements is impracticable, infeasible, or unnecessarily burdensome * * *''.

One commenter noted that in previously promulgated area source MACT standards (*e.g.*, Dry Cleaning MACT and Halogenated Solvent Cleaning MACT), EPA identified area sources as being subject to title V permitting. However, EPA allowed the permitting authorities to defer area sources from title V permitting requirements until December 9, 2004.

In contrast, another commenter supported the proposed requirement to require all affected sources to obtain title V permits. The commenter argued that title V permits are needed because they consolidate sources' applicable requirements in a single place. The commenter further noted that ''* * * given the detailed work practice requirements, it is reasonable to expect significant source-specific tailoring of the standard for each plant's individual configuration.'' See, *e.g.*, 67 FR 44706–07. The commenter also stated that requiring title V permits of area sources of mercury is especially appropriate because a small quantity of mercury is as toxic as far greater amounts of other HAP.

Response: Section 502(a) of the CAA requires any source, including an area source, subject to standards or regulations under section 111 or 112 of the CAA to operate in compliance with a title V permit after the effective date of any title V permits program. The Administrator may not exempt any major source from the requirements of title V.

In order to exempt area sources under the final rule from title V requirements, the test in section 502(a) of the CAA must be met. Specifically, the Administrator must make a finding that title V requirements are impracticable, infeasible, or unnecessarily burdensome for the source category or categories in question. Commenters may provide data which would help the Administrator make such a finding, but the commenters who were opposed to area sources being permitted under the final rule did not provide any such data. Commenters providing supporting data for their arguments is consistent with what the Agency stated in its final rule for the Municipal Solid Waste Landfills NESHAP in reference to the test in section 502(a) of the CAA (68 FR 2227, 2234, January 16, 2003).

In terms of the commenters' concern about title V adding duplicative recordkeeping and reporting requirements, the only potential duplicative requirement that we are aware of is in relation to deviation reporting under the semiannual compliance report required by § 63.8254 of the final rule and the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). However, this potential duplication was addressed by § 63.8254(d) in the proposed rule and this has been clarified in the final rule.

As to the deferral for area sources subject to the Dry Cleaning MACT and the Halogenated Solvent Cleaning MACT, the area sources subject to these MACT standards were deferred from title V permitting until December 9, 2004. See final deferral rulemaking (64 FR 69637, December 14, 1999). This deferral was granted in part because of the concern that area sources would not be able to obtain the technical and procedural assistance from permitting authorities needed to file timely and complete title V applications given that permitting authorities would be focused on the permitting of major sources. However, as the title V program is no longer in its initial stages and the initial permitting of existing major sources is nearing completion, we would not be justified in granting a deferral to area sources under the final rule for the same reason.

In terms of the commenter who supported the permitting of affected sources under the final rule, we agree that the consolidation of requirements in a title V permit is one of the ways that title V helps assure compliance with all applicable requirements. As this commenter also pointed out, title V permits clarify which requirements in standards apply to a source where requirements may vary due to various factors, *e.g.*, design of the facility. Additionally, the title V regulations at 40 CFR part 70 and 40 CFR part 71 help a source assure compliance with its applicable requirements by requiring that a source self-certify to compliance initially and annually, by requiring that a source promptly report deviations from its permit requirements, and by requiring that a permit contain monitoring requirements. It is also important to note that the title V permitting process provides an opportunity for the public to comment on whether a source is complying with its applicable requirements. In short, title V permits can enhance the effectiveness of rules such as the final rule, and EPA, therefore, disagrees that there are no environmental benefits to requiring title V permits for area sources.

In conclusion, as the test in section 502(a) of the CAA has not been met, EPA has retained the requirement in the final rule that affected sources subject to the final rule must obtain title V permits. Therefore, whether an affected source under the final rule is a part of a major or area source, the major/area source is required to obtain a title V permit.

Comment: One commenter believed that the proposed rule violated the CAA because the Agency did not establish standards for some parts of chlor-alkali plants that emit mercury. The commenter noted that under the proposed rule, EPA defined two affected sources: Mercury cell chlor-alkali production facilities and mercury recovery facilities. The commenter did not agree with EPA's determination that within mercury cell chlor-alkali production facilities, chlorine purification, brine preparation and wastewater treatment operations should not be subject to emission standards because they have low mercury air emissions. Similarly, the commenter did not agree with EPA's decision not to regulate chemical mercury recovery and recovery in batch purification stills at mercury recovery facilities. According to the commenter, the CAA does not allow the Agency to exempt certain classes, types and sizes of sources from emission standards, unless EPA finds no potential for emissions. Therefore, the commenter stated that EPA had a legal obligation to establish standards that cover all mercury-emitting parts of chlor-alkali facilities, and the Agency must re-visit and set emission standards for the parts of the production and recovery facilities with low mercury emissions.

Response: During development of the proposed rule, we did not receive any data to indicate that mercury was emitted from chlorine purification, brine preparation, or wastewater treatment operations, and our knowledge of the process indicated that any potential emissions would be very limited (67 FR 44674). Furthermore, we did not receive any data indicating that control measures designed to reduce HAP were in use at existing facilities that had these units. The same holds true for chemical mercury recovery and recovery in batch purification stills at mercury recovery facilities. Therefore, with no reported emissions and process evidence that any emissions would be very limited, we concluded that there was no potential for emissions. Adding to this the existence of a MACT floor of no control (because none are controlled), we did not regulate these processes.

The commenter did not provide emissions data that would indicate that these sources emit significant amounts of mercury, or emit mercury at all. Therefore, the final rule does not contain standards for mercury emissions from chlorine purification, brine preparation, wastewater treatment operations, chemical mercury recovery and recovery in batch purification stills.

We point out that the final rule does contain very stringent emission limitations for all point sources that have been demonstrated to be sources of mercury emissions. Further, the work practice requirements in the final rule address fugitive mercury emissions in all areas of the facility, including the chlorine purification, brine preparation, wastewater treatment areas, as well as areas where chemical mercury recovery processes and batch purification stills are located.

B. What Issues Were Raised Regarding the HAP Addressed by the Rule as Proposed?

As noted earlier, we divided the chlorine production category into two subcategories: Mercury cell chlor-alkali plants and chlorine production plants that do not rely upon mercury cells for chlorine production (diaphragm cell chlor-alkali plants, membrane cell chlor-alkali plants, etc.). On July 3, 2002, we issued separate proposals to address the emissions of mercury from the mercury cell chlor-alkali plant subcategory sources (67 FR 44672) and the emissions of chlorine and HCl from both the non-mercury cell chlorine production subcategory sources and the mercury cell chlor-alkali subcategory sources (67 FR 44713). Specifically, we proposed a rule for mercury emissions from mercury cell chlor-alkali plants, and we proposed not to regulate chlorine and HCl emissions from mercury cell chlor-alkali plants and non-mercury cell chlorine production plants under our authority in section 112(d)(4) of the CAA.

Comments were received regarding the proposed action not to regulate chlorine and HCl emissions (*see* Air Docket OAR–2002–0016 or Air Docket A–2002–09). The aspects of these comments related to the mercury cell chlor-alkali plant subcategory can be generally classified into two basic categories: Our statutory authority under section 112(d)(4); and the site-specific risk assessments that formed the basis for our decision.

Comments Related to the Section 112(d)(4) Authority

Comment: Several comments were received related to our decision not to regulate chlorine and HCl emissions from chlorine production under the authority of section 112(d)(4). Some commenters supported this decision and stated the interpretation of our authority under section 112(d)(4) was appropriate and supported by the legislative history. In contrast, other commenters disagreed with EPA's interpretation of section 112(d)(4). Finally, some of the commenters stated that EPA should use its authority under section 112(c)(9)(B)(ii).

One commenter stated that EPA conducted an appropriate analysis to determine that human exposures from ambient concentrations are well below threshold values with an ample margin of safety. According to another commenter, any further regulation of chlorine and HCl emissions from the chlorine production industry would have no environmental benefits, but would result in costs for monitoring, recordkeeping, and reporting efforts to certify compliance with any requirements. The commenter was concerned that a regulation would also stretch EPA's limited resources in monitoring for compliance. Three commenters stated that EPA's interpretation of their authority under section 112(d)(4) was supported by the legislative history, which emphasizes that Congress included section 112(d)(4) in the CAA to prevent unnecessary regulation of source categories. The commenter agreed that under section 112(d)(4), once EPA establishes that a pollutant has a health threshold and that exposure to that pollutant's emissions are below the health threshold, EPA should refrain from setting MACT standards for that pollutant. The commenter further suggested that EPA should use section 112(d)(4) whenever setting emission standards under section 112(d).

Three commenters disagreed with EPA's interpretation of section 112(d)(4). They did not believe that section 112(d)(4) could be used as an alternative to setting MACT standards under section 112(d)(3). One commenter noted that the phrase ''in lieu of'' was not included in the section 112(d)(4) provisions and that its absence was intentional. In support of their claim, the commenter pointed to section 112(d)(5), which does contain the phrase ''in lieu of.'' The commenter interpreted section 112(d)(4) to mean that health-based thresholds can be considered when establishing the degree of MACT requirements, but not in place of the requirement to establish a MACT floor pursuant to section 112(d)(3).

The commenter also pointed to the provisions of section 112(c)(2) which require the Administrator to establish NESHAP for listed source categories and subcategories. The commenter was concerned that EPA evaluated emissions from chlorine production plants and concluded that since they do not pose a threat to human health and the environment, the Administrator is relieved of her responsibilities to establish a MACT standard. The commenter maintained that this position is not supported by section 112(c)(2).

The commenter also referred to section 112(d)(1), stating that EPA did not have the authority to ''make a determination of no regulation for a listed source category or pollutant.''

Finally, the commenter referred to section 112(d)(3), which contains the MACT floor provisions. According to the commenter, the intent of the NESHAP program is to develop a MACT floor, and EPA is not fulfilling the requirements of the CAA by not performing such an analysis. The commenter stated that a majority of facilities identified in the analysis have adequate controls due to State regulations and these controls should be incorporated into the MACT floor evaluation. The commenter was particularly concerned that by not developing a MACT floor, no new-source MACT standards were created. The commenter requested that EPA perform a MACT floor analysis and develop a NESHAP for new sources.

Two of the commenters stated that EPA should support its decision not to regulate the chlorine production source category by citing the provisions of section 112(c)(9)(B)(ii) in addition to the provisions of section 112(d)(4). The commenters stated that the evaluation performed by EPA would also be sufficient for deleting sources under section 112(c)(9)(B)(ii) and that EPA's proposal to not regulate chlorine production is similar to deleting a subcategory of the Chlorine Production source category. Therefore, in addition to using the authority under section 112(d)(4), the commenters suggested that EPA delete the subcategory using the authority under section 112(c)(9)(B)(ii) to avoid any uncertainty over the use of its authority under section 112(d)(4).

Response: The EPA has the authority under CAA section 112(d)(4) to decide not to establish a NESHAP for chlorine and HCl emissions from certain chlorine production facilities. We have decided to limit our use of section 112(d)(4) to the emissions of chlorine and HCl from sources within the mercury cell chlor-alkali subcategory. While we have decided to establish no standards for the emissions of these two HAP from sources in the mercury cell chlor-alkali plant subcategory, we are establishing standards for the mercury emissions from the sources within that subcategory. As explained elsewhere in today's **Federal Register**, we have decided to delete the non-mercury cell chlorine production plants subcategory under CAA section 112(c)(9)(B)(ii). The only HAP emitted by the non-mercury cell chlorine production sources are chlorine and HCl.

Contrary to other commenters claims that our use of section 112(d)(4) is inappropriate, both the statutory language and the legislative history of the provision support our decision not to set limitations for chlorine and HCl emissions from sources in the mercury cell chlor-alkali plant subcategory. The language of section 112(d)(4) provides the Agency with ample discretion to utilize a risk-based approach in determining whether to establish emission standards for those HAP where we determine that the HAP are ''threshold pollutants'' and that the standard (or no standard) will achieve an ''ample margin of safety.''

The statutory language in section 112(d)(4) is ambiguous. Thus, under the Supreme Court's decision in *Chevron* v. *NRDC,* 467 U.S. 837 (1984), the Agency has the discretion to interpret the language to allow us to establish NESHAP that do set limitations on certain HAP emitted from sources (''when establishing standards'') but to also decide not to set limitations on other HAP emitted from these same sources if the other HAP are threshold pollutants and the risk from the emissions are so low that no standard for that second set of HAP is necessary to protect the public and the environment with ''an ample margin of safety.''

This approach is consistent with prior decisions EPA has made in the context of two other NESHAP. First, in the NESHAP for combustion sources at pulp mills (40 CFR part 63, subpart MM), we chose not to set a standard for HCl emissions from recovery furnaces, while we did set standards for other HAP emitted from the same sources within the category. We explained this decision in the preamble to the proposed MACT standard and received no adverse comment on the approach (63 FR 18754, 18765–68, April 15, 1998). Second, we proposed to set no standard under section 112(d)(4) for HCl emitted from lime kilns, while we also proposed to set standards for other HAP emitted by these same sources (67 FR 78046 December 20, 2002). We also received no adverse comment on that proposed decision. While we originally proposed to utilize section 112(d)(4) to set no standard for chlorine and HCl from chlorine production sources in a separate notice of the **Federal Register** (67 FR 44713, July 3, 2002), we made it clear that the proposed use of section 112(d)(4) would apply to emissions of these two HAP from mercury cell chlor-alkali sources (as well as the emissions of chlorine and HCl from other chlorine production sources).

We do not agree that Congress' use of the phrase ''in lieu of'' in CAA section 112(d)(5) so clearly restricts any possible interpretation of CAA section 112(d)(4) such that some form of a MACT standard must always be set even when the criteria of section 112(d)(4) are met. Instead, we interpret that Congress enacted section 112(d)(4) to provide EPA with the discretion to take risk into account and decide that standards need not be set when the HAP are threshold pollutants and levels being emitted are below the threshold value with an ample margin of safety. Moreover, in each case where we have exercised authority under section 112(d)(4), we have established standards in each category (or subcategory, as here) for those pollutants that do not satisfy the threshold pollutant and ample margin of safety statutory criteria.

We also disagree with the commenter who argued that the provision in section 112(c)(2), which requires the Administrator to establish emission standards for listed categories and subcategories, has much bearing on our use of section 112(d)(4) in this circumstance. By setting a standard for the emission of mercury from the mercury cell chlor-alkali plant subcategory, we are fulfilling our obligations under section 112(c)(2). As stated earlier, we have utilized the same approach in our other uses of section 112(d)(4), *e.g.*, HCl emissions from combustion sources at pulp mills and lime production sources.

The statutory language in section 112(d)(1) and (3) does not prevent us from deciding that no emission standard is necessary for a particular threshold pollutant which is being emitted at levels well below the ample margin of safety when we are also establishing standards for HAP emitted from sources in that same category or subcategory. This approach to our use of section 112(d)(4) is consistent with the statutory language of section 112(d)(1) and (3). We are establishing emission standards for the listed category or subcategory, but are deciding that no MACT floor need be established and no emission standard set for those HAP that meet the criteria of ''threshold pollutant'' and ''ample margin of safety.''

With regard to the concerns the commenter raised about the failure to set a standard for new sources, our review of the mercury cell subcategory indicates that no new mercury cell chlor-alkali plants will be constructed. Given that our emission standard for new sources in the mercury cell chlor-alkali subcategory prohibits the emission of mercury, we do not believe any new sources using mercury cells for chlorine production will ever be constructed (or reconstructed). Therefore, this no-mercury emissions requirement in the final rule will, in effect, also ensure that there are no chlorine or HCl emissions from new mercury cell facilities.

In response to other commenters' suggestion that we utilize the authority of section 112(c)(9)(B)(ii) to delete the chlorine production category, we have decided to exercise our authority under that statutory provision for the non-mercury cell chlorine production subcategory. That decision is discussed in a separate notice in today's **Federal Register.** However, we are not deleting the mercury cell chlor-alkali plant subcategory because the sources within the category also emit mercury, and we are establishing emissions standards for mercury emissions in today's final rule.

Comment: Some commenters concluded that we did not establish either cancer or noncancer thresholds for HCl and chlorine and, therefore, it is illegal for EPA to attempt to use section 112(d)(4) to set standards.

Response: The ''threshold level'' in section 112(d)(4) refers to the level of concentration of a chemical under which no health effects are expected from exposure, although this term is not defined in section 112. Further, section 112 does not address the process that must be followed to ''establish'' a threshold level.

The reference concentration (RfC) is a ''long-term'' threshold, defined as an estimate of a daily inhalation exposure that, over a lifetime, would not likely result in the occurrence of noncancer health effects in humans. We have determined that the RfC for HCl of 20 micrograms per cubic meter ($\mu g/m^3$) is an appropriate threshold value for assessing risk to humans associated with exposure to HCl through inhalation *http://www.epa.gov/iris/subst/0396.htm.*

In cases where we have not studied a chemical itself, we rely on the studies of other governmental agencies, such as the Agency for Toxic Substances and Disease Registry (ATSDR) or the Office of Health Hazard Assessment of California's Environmental Protection Agency (CAL EPA), for RfC values. The CAL EPA developed an RfC value of 0.2 $\mu g/m^3$ for chlorine based on a large inhalation study with rats.

Acute exposure guideline level (AEGL) toxicity values are estimates of adverse health effects due to a single exposure lasting 8 hours or less. The confidence in the AEGL (a qualitative rating of either low, medium, or high) is based on the number of studies available and the quality of the data. Consensus toxicity values for effects of acute exposures have been developed by several different organizations, and we are beginning to develop such values. A national advisory committee organized by EPA has developed AEGL's for priority chemicals for 30-minute, 1-hour, 4-hour, and 8-hour airborne exposures. They have also determined the levels of these chemicals at each exposure duration that will protect against discomfort (AEGL1), serious effects (AEGL2), and life-threatening effects or death (AEGL3). Hydrogen chloride has been assigned AEGL values (65 FR 39264, June 23, 2000), including the 1-hour, AEGL1 of 2,700 $\mu g/m^3$ used in our revised analysis. Chlorine has also been assigned AEGL values (62 FR 58840), including the 1-hour AEGL1 of 1,500 $\mu g/m^3$ used in our revised analysis.

We maintain that the listing of health thresholds by EPA and other organizations in the public domain as discussed above has ''established'' health thresholds for HCl and chlorine. Further, the recognition of these levels by EPA, ASTDR, and CAL EPA indicates that chlorine and HCl are threshold pollutants.

Moreover, we provided the public an opportunity to comment on the thresholds for chlorine and HCl that we used in our original analysis for the proposed action (67 FR 44716). We used the same threshold level for HCl for both the proposed and final NESHAP for the pulp and paper mill category. We have also used the same threshold for HCl in the proposed and final NESHAP for lime production (67 FR 78046; final action is anticipated in August 2003). There is no requirement in section 112(d)(4) that EPA develop or finalize a threshold for a particular HAP in a certain manner. The thresholds we have used for both HCl and chlorine are consistent with the statutory language in section 112(d)(4).

Comments Related to the Risk Assessment

Comment: In the analysis for the proposed action (67 FR 44713), we used the HCl RfC to determine the long-term health effects of chlorine emissions, since chlorine photolyzes very quickly to HCl in sunlight. Two comments supported this methodology and stated that our decision was based on sound scientific knowledge of the pollutants of concern.

In contrast, two other commenters did not agree with our use of the HCl RfC as a threshold level for chlorine. The commenters stated that not all of the annual chlorine emissions can be considered as HCl and, therefore, the chlorine exposure was underestimated. The commenters argued that chlorine emissions will not undergo photolysis to convert to HCl when there is not bright sunshine (*i.e.,* at night or on cloudy days).

Response: The widely accepted fact that chlorine is photolyzed in sunlight formed the basis for the assumption in the original risk assessment that chronic exposure to chlorine would not occur. As a result of this comment, we re-examined the literature on the atmospheric fate of chlorine to validate our original assumption.

The additional information obtained from the literature confirmed our earlier information. There are several different pathways that molecular chlorine can take, including photolysis (reaction with light), reactions with hydroxyl radicals, reactions with oxygen atoms, and reactions with water vapor. Each pathway results in different amounts of Cl_2 being removed from the troposphere, and different pathways are predominant at different times of the day. However, photolysis is the primary pathway.

Therefore, this information did not fundamentally change the assumption made in the original risk assessment, which was that on a long-term basis, individuals will be exposed more to HCl formed from the photolysis of chlorine than to chlorine. However, the commenters are correct that there will be situations where individuals will be exposed to chlorine. Therefore, in addition to the assessment where we considered only acute exposure to chlorine, we concluded that it was appropriate to consider the effects of chronic exposure to chlorine emissions from chlor-alkali plants. In order to provide an upper bound estimate of the chronic risks to compare with the lower bound estimates assuming that all chlorine was converted to HCl, we conducted modeling assuming that no chlorine is photolyzed.

In general, we consider an exposure concentration which is below the RfC concentration (what we call a hazard quotient of less than 1) to be ''safe.'' This is based on the definition of RfC. The RfC is a peer reviewed value defined as an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily inhalation exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious noncancer effects during a lifetime (*i.e.,* 70 years).

As discussed above, we conducted additional modeling for major source facilities within the subcategory using the same model used for the proposed action (ISCST3) to estimate chronic chlorine exposure using the assumption that no chlorine is photolyzed to HCl. The hazard quotients resulting from this additional modeling defined the upper bound of our risk assessment. The highest upper-bound hazard quotient estimated by the model is just over 0.3. (For more details regarding this revised risk assessment, refer to table 2 of the responses to comment document, available in the docket.) Given the health protective assumptions used in this analysis, the value of 0.3 represents a hypothetical exposure that is well above what we would expect actual exposures to be. This is because chlorine is converted to HCl in the presence of sunlight within a few minutes. In addition, the hazard quotient of 0.3, which results from this exposure scenario is well below the safe value of 1. Thus, we have concluded that, even assuming that some chronic exposure to chlorine may occur, that none of the major sources included in this subcategory will have emissions of chlorine or HCl that exceed a level of exposure which is adequate to protect public health and the environment with an ample margin of safety.

Comment: Two commenters did not support EPA's use of the AEGL2 for use as a short-term exposure limit for chlorine and HCl. One commenter stated that the AEGL2 values would not sufficiently protect public health because they would allow emissions at levels that cause ''discomfort,'' and according to the commenter, discomfort is an adverse health effect. The commenter also complained that EPA did not explain why it chose to use AEGL2 rather than AEGL1 or AEGL3. The commenter explained that although emissions from chlorine plants did not exceed AEGL2 values, the emissions may exceed AEGL1 values, and if they did, the proposed action would not meet the statutory requirements. Another commenter stated that AEGL limits are not appropriate for assessing daily human exposure scenarios because they were developed for emergency planning. The commenter recommended that EPA use the American Conference of Governmental Industrial Hygienists (ACGIH), which has a 1-hour Short Term Exposure Limit (STEL) similar to the AEGL1 value of 1 part per million (ppm) for chlorine and is used to protect against eye and mucous membrane irritation. The commenter stressed that EPA must use conservative benchmarks before concluding that an ample margin of safety exists.

Response: The AEGL values represent short-term threshold or ceiling exposure values intended for the protection of the general public, including susceptible or sensitive individuals, but not hypersusceptible or hypersensitive individuals. The AEGL values represent biological reference values for this defined human population and consist of three biological endpoints for each of four different exposure periods of 30 minutes, l hour, 4 hours, and 8 hrs.

As utilized in the proposed action, the AEGL2 1-hour concentrations for chlorine and HCl are 5,800 $\mu g/m^3$ and 33,000 $\mu g/m^3$, respectively.

The 1-hour AEGL1 concentration for chlorine is 2,900 $\mu g/m^3$ and the corresponding value for HCl is 2,700 $\mu g/m^3$. The ACGIH short term exposure limit (STEL) for chlorine, which is 1 ppm is approximately equal to the AEGL1 value of 2,900 $\mu g/m^3$.

Although we stand by our original analysis, which used the AEGL2 level, we have incorporated the commentor's suggested use of the AEGL1 values (possibly with a safety factor) for determining whether an ample margin of safety has been obtained. Therefore, we simply compared the short term (1-hour average) modeling results from the original acute risk assessment to the AEGL1 values. These results were obtained by modeling the maximum allowable hourly emissions reported in the section 114 responses for each of the sources. For plants that did not report fugitive emissions, fugitive emissions were estimated using worst-case emission factors.

The maximum modeled 1-hour chlorine concentration for two of the three plants with the mercury cell chlor-alkali process is less than 5 percent of the AEGL1 (and ACGIH) value for chlorine. Further, the highest modeled concentration for any plant, 155 $\mu g/m^3$, is less than 6 percent of the AEGL1 values. The highest modeled 1-hour HCl concentration for any plant, 32 $\mu g/m^3$, is less than 2 percent of the AEGL1 value for HCl. Furthermore, all of the mercury cell chlor-alkali facilities also produce chlorine using a non-mercury chlorine production process (*i.e.*, diaphragm cells). The modeled emissions represent chlorine and HCl emissions from both processes. Therefore, the chlorine and HCl emissions from the mercury cell chlor-alkali process would be even lower.

Based on this comparison, we conclude that the chlorine and HCl emissions from mercury cell chlor-alkali production plants do not represent an unsafe level of acute exposure. We further maintain that, along with the chlorine exposure assessment, this proves that an ample margin of safety is provided with no additional control.

Comment: Two commenters supported EPA's method of selecting a risk assessment approach to meet the unique needs of the chlorine production industry. The commenters agreed that the risk assessment methodology should not be interpreted as a standardized approach that would set a precedent for how EPA will apply CAA section 112(d)(4) in future cases. Furthermore, the commenters stated that the degree of conservatism built into all aspects of the risk assessment conducted for the chlorine production source category could vary greatly in future risk assessments for other source categories. The commenters stressed that the conservative assumptions made in the health effects assessment, emissions estimates, and exposure assessment were appropriate for the proposed action.

In contrast, one commenter stated that the risk assessment fell short of the Agency's prior practice. According to the commenter, whenever EPA has made determinations to regulate a specific pollutant based on health considerations (*e.g.*, national ambient air quality standards (NAAQS) for ozone and PM), the Agency evaluated health effects and exposure in great detail. The commenter contended that in this case, EPA appears to be content with ''the bare and unsupported assumptions about what health levels are safe.'' The commenter argued that it was not appropriate for EPA to use a rigorous approach when setting standards and a more cursory approach when making a decision not to regulate.

Response: We disagree with the one commenter's characterization of the assessment that forms the basis for this decision, and we strongly dispute the characterization of the assessment as ''bare and unsupported.'' As discussed elsewhere in this preamble, we maintain that the RfC and AEGL values used as benchmarks for this assessment are scientifically sound and appropriate. The emissions data and other inputs used for this analysis, which were provided by the industry and checked by our staff, are representative of the industry.

In this assessment, the predicted health effects estimated, using very conservative inputs and assumptions, were well below the recognized health thresholds. While our approach in this particular action may not be the same as an approach for a NAAQS, we believe that it has been certainly more than ''cursory.'' We have looked at emissions and exposure data for each of the major sources in the subcategory. We have established hazard indices for chlorine and HCl for each major source in the subcategory. We performed a qualitative ecological assessment. Moreover, in response to comment received, we have revised our analyses and taken into account comments that we have received when performing these reassessments. We will base each risk assessment for this and future regulatory action on sound scientific principles.

Comment: In the proposed action, the risk assessment modeling was conducted by placing receptors at the geographic center of census blocks within 2 kilometers of the site and in the population-weighted centers of census block groups or census tracks out to 50 kilometers. Two commenters did not agree with this methodology for determining receptor location for threshold pollutants. One commenter stated that EPA's methodology would be more appropriate for cancer causing agent, where the risk is based on probabilities of health effects. The commenter argued that for noncancer (*i.e.*, threshold pollutants) compounds, placing the receptors at the center of census tracks would not properly identify the highest impacts close to the facility. They felt that it was more appropriate to measure the exposure of the most exposed individual (*e.g.*, someone living at the fence line of a facility or directly downwind).

Response: We certainly agree with the commenters that the greatest impacts will likely occur near the facility for this source subcategory. However, we do not agree with the commenters that our approach fails to meet statutory requirements. We do not feel that considering an ''ample margin of safety'' means that we must demonstrate no risk or adverse health effects for a theoretical person living at the fence line. Rather, it is appropriate to assess the risks at locations where people most likely reside. A census block is the smallest geographic unit for which the Census Bureau tabulates 100 percent data. While census blocks in rural areas may be larger, many blocks correspond to individual city blocks in more populated areas. The commenter is correct in that an individual could live closer to the plant than the center of the census block and our approach would have slightly underestimated risk. It is just as likely, however, that the closest individual could live farther from the plant than the center of the census block causing our risk estimates to be slightly overestimated. By placing receptors at the center of populated census blocks on all sides of a facility, we have evaluated people living ''downwind.'' In conclusion, we continue to feel that placing a receptor in the geographic center of populated census blocks near a facility is a well established approach to exposure modeling which results in a reasonable approximation of estimating the risks where people actually live, and we maintain that this methodology is appropriate for actions taken under the authority of section 112(d)(4).

Comment: One commenter stated that all chlorine emissions from chlorine production facilities that are collocated with other source categories need to be reviewed as a whole when evaluating public health risk, adverse environmental effects, and possible control strategies. The commenter stressed that other sources of chlorine and HCl should be included in the risk assessment under section 112(d)(4). The commenter was concerned that not accounting for all chlorine and HCl emissions from a facility would provide the community with a false sense of assurance of protection and is not consistent with the legislative intent of the CAA to consider cumulative HAP exposure issues through an integrated approach under section 112(d), 112(f), and 112(k). Therefore, the commenter requested that EPA evaluate the potential for adverse health and environmental impacts using conservative risk assessment methodology that incorporates all known chlorine and HCl emissions from a contiguous facility.

Response: Section 112 of the CAA requires us to list categories and subcategories of major sources and area sources of HAP and to establish NESHAP for the listed source categories and subcategories. In directing us how to establish MACT emission limits, section 112(d)(3) of the CAA requires us to set the emission limitation at a level that assures that all major sources achieve the level of control at least as stringent as that already achieved by the better-controlled and lower-emitting sources in each source category or subcategory. Therefore, the entire MACT program is structured on a source category-specific basis. All MACT standards developed to date have addressed emissions from specific source categories.

There are instances where mercury cell chlor-alkali facilities are collocated with other source categories. However, based on the risk assessment for chlorine and HCl emissions from mercury cell chlor-alkali plants, the predicted impacts from chlorine and HCl at these plants are extremely low. We believe that the human health and environmental impacts from all sources in the subcategory even when collocated with other chlorine and HCl emissions will still be within an ample margin of safety to protect the public health, and will not cause adverse environmental effects. Moreover, as indicated in the preamble to the proposed action, most major processes at the sites where mercury cell chlor-alkali facilities are located are subject to, or will be subject to, NESHAP to reduce HAP emissions (67 FR 44714, July 3, 2002). Therefore, it would be inappropriate to include emissions from those sources in an assessment for the mercury cell chlor-alkali subcategory conducted under the authority of section 112(d)(4).

Comment: Two commenters stated that the environmental effects analysis was not adequate. One commenter stated that potential ecological effects of HCl emissions have not been properly referenced. One commenter stated that EPA's proposed action falls short of its obligation to protect against environmental effects. According to the commenter, EPA has understated its statutory obligation in the proposed action. The commenter referred to the legislative history, which indicates that CAA section 112(d)(4) requires standards that ''would not result in adverse environmental effects which would otherwise be reduced or eliminated.'' The commenter listed the several shortcomings in the EPA's environmental assessment.

The commenter concluded that although EPA acknowledged that it had an obligation to ensure that any standards set under section 112(d)(4) did not have any adverse environmental effects, the Agency did not properly consider the issue. Therefore, the commenter stated that EPA could not promulgate standards under section 112(d)(4) without contravening the CAA.

Response: While CAA section 112(d)(4) makes no mention of environmental effects, we took the potential of such adverse effects into account when we issued our proposed action. The level of our analysis at proposal was adequate to satisfy the requirements of section 112(d)(4). The commenters did not suggest that they believed there was the potential for adverse environmental effects from HCl or chlorine emissions from mercury cell chlor-alkali plants. Were there any evidence that such adverse effects were likely, or even possible, we would have conducted a more intensive ecological risk assessment.

The commenters are correct, however, that we did not discuss the ecological effects of chlorine. This was because, as was stated in the proposal preamble, we did not perform a separate evaluation of chronic chlorine exposure because chlorine is converted to HCl in the atmosphere so rapidly.

Atmospheric exposure is the primary pathway for environmental effects from chlorine emissions. However, since most chlorine is converted to HCl, studies have focused on the effects of HCl on vegetation. Although plant exposures to elevated levels of chlorine can cause plant injury, it tends to be converted to other, less toxic forms rather rapidly in plants and may not result in the direct accumulation of toxic pollutant residuals important in the food chain.

Plant studies have found foliar damage due to chlorine emissions, decreased levels of chlorphyll a and b, decreased leaf areas, obvious chlorosis, and a decline in fruit production due to chlorine emissions.

There is evidence of effects to animals due to accidental and/or catastophic exposures, but the chlorine concentrations of these exposures are unknown. However, there are no data on exposure to historic or atmospheric concentrations.

More information is available on the effects of chlorine from aquatic exposures. However, there is no evidence that suggests that emissions of chlorine from industrial sources in the air contribute significantly to aquatic concentrations of chlorine.

One study reported a significant decrease in phytoplankton activity following exposure to 0.1 ppm chlorine in cooling tower water. Additional laboratory studies showed that continuous exposure to 0.002 milligrams per liter (mg/L) total residual chlorine (TRC) resulted in depressed algal biomass in naturally-derived microcosms.

When exposed continuously for 96 hours to 0.05 mg/L TRC, the Eurasian water milfoil showed a significant reduction in shoot and dry weights, shoot length, and chlorophyll content.

Aquatic invertebrates are very sensitive to chlorine and reaction products of chlorine, with early life stages showing the most sensitivity. For example, free chlorine, monochloramine, and dichloroamine have been shown to reduce the rate of oyster larvae survival. Many studies have been performed, and the results are highly variable depending on the chlorine species, the lifestage of the invertebrate, and other factors such as salinity. The most sensitive aquatic species appears to be molluscan larvae, with lethal concentration 50% (LC_{50}) of 0.005 mg/L. Sublethal effects have also been studied, including reduced growth, reduced motility, and reproductive failure.

The effects on fish also vary depending on the life stage and fish species and environmental factors, such as the pH, temperature, and type of chlorine species. Larval stages are more susceptible to effects, and freshwater species are more sensitive than marine species. Free chlorine is generally more toxic than residual chlorine; where the form of chlorine is dependent on the pH of the water. Sublethal effects such as avoidance, reduction of diversity in chlorinated effluents, reduction or elimination of spawning, abnormal larvae, reduced oxygen consumption, and gill damage have been noted. Many LC_{50} values were reported, ranging from 0.08 mg/L after 24 hours of exposure to TRC to 2.4 mg/L after 0.5 hours of exposure to TRC.

Acute and chronic exposures to predicted chlorine and HCl concentrations around the sources are not expected to result in adverse toxicity effects. These pollutants are not persistent in the environment. The chlorine and HCl emitted should not significantly contribute to aquatic chlorine concentrations and are not likely to accumulate in the soil. Chlorine rapidly converts to HCl in the atmosphere, and chlorine and HCl are not believed to result in biomagnification or bioaccumulation in the environment. Therefore, we do not feel there will be adverse ecological effects due to chlorine and HCl emissions from mercury cell chlor-alkali plants.

C. What Issues Were Raised Regarding the Compliance Date?

Comment: Commenters requested an extension of the compliance date, which was proposed to be 2 years from the effective date of the final rule. The commenters recommended that the compliance date should be changed to 3 years after promulgation. The commenters stated that affected facilities are being required to install costly, complex control and monitoring equipment, as well as establish additional operating and maintenance procedures at their facilities in order to ensure compliance with the emission limitations and work practice requirements of the proposed rule. The commenters believed that 2 years was not a sufficient period of time to complete such tasks, specifically the continuous monitoring requirements.

Response: We agree that since the existing sources are required to install complex monitoring equipment and to establish additional operating and maintenance procedures, it is reasonable to allow more time than the proposed 2-year compliance period. Section 63.6(c)(1) of the NESHAP General Provisions states that ''* * * in no case will the compliance date * * * exceed 3 years after the effective date of * * *.'' Therefore, the final rule specifies that the compliance date for existing sources is 3 years after the effective date of the final rule.

D. What Issues Were Raised Regarding the Emission Limitations?

Comment: One commenter, which submitted comments after the close of the comment period, recommended that EPA re-define MACT to ban the use of mercury cell technology. The commenter explained that this would be easily achievable because the majority of the chlorine production industry already uses other, superior technologies such as membrane cells and diaphragm cells. The commenter claimed that EPA abused its authority to establish subcategories of emission sources by creating a subcategory of ''mercury cell chlor-alkali plants'' within the chlorine production source category which limits the pool of facilities upon which the MACT floor is based to those who create dangerous pollution, as opposed to those industry leaders that use non-polluting and readily available equipment.

The commenter further listed a lack of confidence that the mercury cell process could be adequately controlled. The commenter explained that the work practice requirements which are proposed to address fugitive emissions, the largest source of emissions from this process, are too weak.

Finally, the commenter stated that converting all mercury cell plants to membrane cells would still be cost-effective, and that their estimate of the cost to convert all mercury cell plants to other technologies ($920 million) was justifiable given the significant threat to public health and the environment posed by mercury.

Response: We disagree with the commenter that we abused our authority to create subcategories by subcategorizing the chlorine production industry and only including mercury cell plants in the MACT floor analysis. It is our general policy to subcategorize when there are technical distinctions among classes, types, or sizes of sources, and manufacturing processes of sources, that would impact setting an appropriate emission limit even when creating the subcategories leads to some with a small number of sources. This policy is supported by the broad discretion provided to the Agency to establish subcategories under CAA section 112(c), the legislative history, and EPA's prior rulemakings.

In general, EPA has previously taken the position that subcategorization is appropriate where types of emissions and/or types of operation make use of the same air pollution control technology infeasible. The EPA's rulemakings reflect this general understanding and provide criteria for subcategorization that focus on the appropriateness of applying similar technology-based requirements at different sources.

The EPA feels that the subcategorization scheme it has used for this category of sources (as described above and in the proposed rule) is consistent with the statute, the legislative history, and EPA's past implementation of section 112(c) and the MACT program. The HAP emitted by the two subcategories (mercury cell chlor-alkali plants and non-mercury cell chlorine production) plants are different—while plants in both categories emit chlorine and HCl, only plants in the mercury cell subcategory emit mercury. The processes used to produce chlorine that the plants in the two subcategories used are generally different (because of the use of the mercury cells). Thus, no change was made in response to this comment and the final rule does not ban mercury cells (except the final rule does prohibit the emission of mercury from new or reconstructed chlor-alkali production facility sources).

With regard to the cost effectiveness of a ban of mercury cell chlor-alkali facilities, the commenter did not provide any basis for their estimate so we could not verify these costs. Further, we do not feel that ''conversion'' accurately describes the replacement of a mercury cell plant to another technology. There is little salvageable from a mercury cell plant that can be used in the construction of a membrane cell plant, so the demolition of the mercury cell plant followed by the construction of a membrane cell plant is a more accurate characterization.

Therefore, we did not promulgate a final rule that requires non-mercury technology for chlorine production.

Comment: Two commenters did not agree with the proposed ''beyond-the-floor'' emission limitations. They stated that there is no justification for EPA to set emission limits beyond the floor, as proposed. The commenters stressed that EPA is required to assess the cost-benefit relationship when considering ''beyond the MACT floor'' limitations. According to the commenters, the Agency did not set forth an accurate basis for costs associated with meeting the MACT floor or cost/benefits associated with meeting the ''beyond the MACT floor'' emission limitations.

These commenters were also concerned that the very low emission limits required by EPA's beyond-the-floor determination cannot be obtained by the industry as a whole. Specifically, the commenters stated that the Agency lacks high quality point source emission data upon which to base their ''beyond-the-floor'' limits. The commenters pointed out that the mercury emission limitations for hydrogen vent gas streams are based on limited data provided by a single facility in Maine that has been closed for nearly 2 years. The commenters maintained that for all of the eleven plants combined (ten affected plants plus the closed Maine plant), there was very little high quality point source emission data. Due to the significant chance that the data used to develop the standard are biased and quantitatively non-representative, the commenters stated that the Agency was not justified in moving beyond the floor to the most stringent value ever obtained by the industry.

The commenters further argued that EPA's conclusion that the ''beyond-the-floor'' emission limitations can be met with existing, commercially available control equipment is not supported and thereby seriously flawed. The commenters pointed out that EPA presented no data in the preamble or elsewhere in support of their decision that the proposed standards could be met with commercially available control systems.

Response: First, we disagree with the commenters' assertions that we did not have justification for going beyond the floor, and that we did not have an accurate basis for costs associated with meeting the MACT floor or meeting beyond-the-floor emission limitations. We conducted a very detailed plant-specific cost impacts analysis which is available in the docket. The commenters did not provide any specific comments on this detailed analysis or any specific data or rationale to refute our cost analysis. Therefore, we stand by our original analysis and have not made any changes to the cost impacts approach. Based on our analysis, we concluded that the costs/benefits of going beyond the floor are warranted. Given the persistent nature of mercury in the environment and its associated health and welfare impacts, we continue to feel that the additional emission reductions that will be achieved by the beyond-the-floor option are warranted considering the associated costs.

However, in the proposal preamble (67 FR 44682), we acknowledged that there was uncertainty associated with the level of control associated with the beyond-the-floor option proposed because the molecular sieve adsorption control technology is no longer commercially available, and because the plant representing this level of control is no longer operating. We did not receive any comments indicating that the molecular sieve control technology is commercially available. Further, since the plant has closed, we were unable to obtain additional information to further scrutinize the data to ensure that they were not biased and quantitatively non-representative. Therefore, we have concluded that we cannot fully demonstrate that the proposed beyond-the-floor standard is achievable using commercially available technology.

In the proposal preamble, however, we also stated that we were retaining the option of setting the standard at the next lowest normalized emission value of 0.076g Hg/Mg Cl_2 for plants with end box ventilation systems. The plant with this emissions level controls its by-product hydrogen system with a series of iodine and potassium iodide impregnated carbon adsorbers, and their end box ventilation system vent with a condenser and demister, which are commercially available technologies. Further, in the documentation for the proposed standard, we determined on a plant-specific basis which commercially available technologies could be made to comply with the proposed standard. The commenters provided no comment on why the application of the very specific application of these technologies could not achieve the emission limitations.

The emissions estimates for the facility with normalized emissions of 0.076 g Hg/Mg Cl_2 are based on weekly testing using methods that are modifications of EPA Methods 101A and 102. The primary difference between the methods used by the facility and the EPA Reference Methods is that the sampling is not isokinetic. We discussed our opinion that data obtained using this type of modified method were acceptable to use in MACT standards in the proposal BID. Therefore, it can be considered that the emission estimates used to establish the level of 0.076 grams Hg/Mg Cl_2 are based on weekly performance tests. We do not consider such data to be of low quality. Therefore for the final rule, we have selected the 0.076 grams Hg/Mg Cl_2 beyond-the-floor option as MACT for plants with end box ventilation systems.

For the by-product hydrogen stream for plants without end box ventilation systems and mercury thermal recovery unit vents, there were no questions raised regarding the availability of the control techniques used at the lowest emitting plants that formed the basis for the proposed emission limitations. Further, at proposal, we examined the data used to establish the emission limitations and determined that they were of adequate quality to be used to establish standards. Therefore, the final rule retains the proposed emission limitations for these emission sources.

Comment: Commenters were concerned that the proposed mercury emission limitation for by-product hydrogen had a daily averaging period for continuous compliance. According to the commenters, the Agency developed the proposed standard using annual average emissions and actual annual production and then interpolated to a daily limit without regard to statistical error. Therefore, the commenters requested either an annual average emission rate limit or that the daily limit be set at not less than two times the annual limit divided by 365 (days).

Response: The commenters are correct in that the normalized mercury emissions used to establish the standards were based on annual average emissions and annual actual chlorine production. Therefore, the commenters' concerns about the variability of the control systems over a year and the ability to comply on a daily basis with this limit have merit. We considered the two options offered by the commenters (a 365-day compliance period and adjustments to account for daily variations).

We do not feel that it would be appropriate to apply a generic multiplier to the limit for mercury cell chlor-alkali plants to account for short-term variation. In addition, mercury cell emissions data were not available to assess the variability in emissions from these emission points. Therefore, we concluded that the emission limitation should reflect an annual average. This would be consistent with the data used to create the emission limitation and would allow for short-term variations in operations and control device performance.

The final rule is allowing weekly monitoring/testing as an alternative method to determine continuous compliance with the emission limitations. In order to be consistent with the continuous compliance approach, we concluded that the by-product hydrogen/end box ventilation emission limitation in the final rule should be annualized on a 52-week rolling basis. Specifically, the final rule requires that mercury emissions from all by-product hydrogen streams and end box ventilation system vents not exceed 0.076 grams Hg/Mg Cl_2 for any consecutive 52-week period.

E. What Issues Were Raised Regarding the Work Practices?

Comment: One commenter recommended that EPA establish numerical standards for fugitive emissions. The commenter maintained that, absent published information on good mass balance analyses performed at chlor-alkali facilities, one can only assume that significant mercury losses are occurring through fugitive emissions. Accordingly, the commenter felt it is crucial that the EPA step up efforts to address all potential release routes from such facilities, including fugitive emissions.

Another commenter, which submitted comments after the close of the comment period, expressed the view that the mercury consumed cannot be accounted for in material balances. This commenter asserted that the proposed rule failed to address the majority of the true annual mercury emissions from the mercury cell chlor-alkali industry. The commenter explained that the mercury used in this industry is not incorporated into final products or consumed in the process, so all mercury purchased is used to replenish mercury that has been lost from the manufacturing process. The commenter compared the amount of mercury purchased by the industry in 1994 (136 tons) to EPA's estimate of annual emissions (22,200 pounds or 11.1 tons) and concluded that the proposed rule fails to account for nearly 90 percent of the true mercury emissions from this industry. The commenter drew this conclusion based on the assumption that most of the mercury would be released to the air rather than transferred off-site as solid waste or accumulated in on-site tanks and ponds. The commenter noted that EPA's estimate of annual emissions was based on outdated and inadequate estimates of fugitive emissions which were based on short-term measurements taken when fugitive emissions were non-representatively low.

One of these commenters, who submitted comments after the comment period, recommended that EPA require both monitoring of fugitive emissions from cell rooms and waste storage areas and establish a reduction goal for such emissions. According to the commenter, technologies are available to quantify airborne mercury concentrations continuously, and in combination with estimates of air flow rates, estimates of fugitive loss rates under selected conditions could be made and could serve as the basis for reduction targets.

Response: The issue of unaccounted for mercury has been the subject of intense scrutiny from other groups within EPA and the indusry. As part of the Great Lakes Binational Toxics Strategy, mercury cell chlorine producers annually report the total mercury consumption for the industry. From the baseline consumption of 160 tons per year (tpy) for the years 1990–1995, the industry reported an 81 percent reduction of mercury consumed in 2001 (30 tpy). One of the commenters characterized the 2001 consumption as an outlier, but the 79 tpy consumed in 2000 still represents a significant decrease from the baseline level.

Even with this decrease in consumption, significant mercury remains unaccounted for by the industry. The mercury releases reported to the air, water, and solid wastes in the 2000 Toxics Release Inventory (TRI) totaled around 14 tons. This leaves around 65 tons of consumed mercury that is not accounted for in the year 2000.

While it may appear to the commenters that the discrepancy in the mercury material balance is the result of fugitive emissions, there is little empirical evidence to support this conclusion. The commenters did not provide any emissions data to support their assertion. Furthermore, industry personnel claim that mercury which condenses and accumulates in pipes, tanks, and other plant equipment makes up a large component of the unaccounted for mercury. While the commenters completely discount this claim by the industry, it is relevant to consider the very high density of mercury. For instance, the 65 tons of unaccounted for mercury in 2000 averages just over 7 tons per plant. One gallon of mercury weighs around 113 pounds, meaning that around 124 gallons of mercury would be unaccounted for per plant. This is a very small percentage (less than 2 percent) of the amount of mercury typically on site at most facilities. However, the industry is also unable to fully substantiate their theory. Therefore, the fate of all the mercury consumed at mercury cell chlor-alkali plants remains somewhat of an enigma.

We agree that work practice standards should only be set when it is not feasible to prescribe or enforce an emission standard. Indeed, our reasons for establishing work practices instead of numerical limits are based on factors associated with the practicality and feasibility of setting a realistic limit against which compliance can be measured and enforced.

First, data are not available to establish a numerical emission standard for fugitive emissions. As stated in the proposal preamble (67 FR 44680), emissions data for fugitives from cell rooms and waste storage areas are very limited. Second, we do not agree with the commenter's implication that available measurement technologies could support enforcing a numerical emission standard for the following reasons:

- Mercury emission monitors have not been used to monitor fugitive emissions at mercury chlor-alkali facilities for compliance demonstrations;

- The variability in the number of and location of exhaust vents at each facility affects the amount of air moved through the cell rooms and thus affects the mass emission rate of the fugitives; and
- The variability of the cell room roof configuration affects the feasibility of using the continuous emissions monitors at each facility.

Therefore, the establishment of numerical emission limitations for fugitive emissions from the cell room and other areas is ''not feasible,'' as defined in CAA section 112(h)(2)(B). Thus, the final rule retains the work practice elements of the proposed rule.

However, in response to the concerns about unaccounted for mercury, we did add a provision in the final rule that requires each facility to record and report the mercury consumed each year. While there are no mercury consumption reduction targets in the final rule, we believe that reporting mercury consumption on a plant-specific basis will encourage additional action to identify unaccounted for mercury and reduce mercury consumption.

Comment: A commenter that submitted comments well after the close of the comment period expressed the opinion that there was a fundamental flaw in the proposed rule because the proposal will weaken existing sources' obligations to limit mercury emissions from the cell room. They cited 42 U.S.C. § 7412(d)(7), which prohibits emission standards from weakening existing standards. This commenter summarized the 40 CFR part 61 mercury NESHAP, which requires mercury cell chlor-alkali plants to not emit more than 2,300 grams per day of mercury from the entire facility, including the cell room, the by-product hydrogen streams, the end box ventilation system vents, and other sources of mercury. The commenter stated that even if emissions from all other points were zero, emission from the cell room cannot exceed 2,300 grams per day. The commenter acknowledged that an owner or operator may forego cell room emission testing and assume that cell room emissions are 1,300 grams/day, but pointed out that complying with these work practices does not absolve the owner or operator of the obligation to meet the applicable numeric emission standard.

The commenter contrasted this with the proposed rule, which established numerical emission standards for by-product hydrogen streams, end box ventilation systems, and mercury thermal recovery unit vents, but not for cell room fugitive emissions. The commenter claimed that emissions from the cell room will be able to exceed 2,300 grams/day so long as the work practices are followed, when the rule as proposed prohibits such a result.

The commenter concluded that it is not sufficient to say that the work practices that have been proposed are more stringent than the existing requirements, because neither the existing nor proposed work practices by themselves require any given numeric level to be achieved. They argued that the existing numeric limit provides EPA and the public with an enforceable limit of performance to which owners and operators can be held. The commenter went on to indicate that such a numerical standard is particularly necessary, as plants are currently emitting far more than 2,300 grams per day of mercury. To support this assertion, the commenter provided information indicating that mercury cell plants add much more mercury to their cells than 2,300 grams per day, and they concluded that cell room emissions is a very likely way that mercury is lost. In conclusion, the commenter stated that it would be inappropriate for EPA to rely entirely on a work practice standard and eliminate stricter provisions that would enable the Agency to insist that facilities keep their emissions below a set level.

Response: The 40 CFR part 61, Mercury NESHAP, § 61.53(c)(1), contains requirements for stack sampling to determine emission levels for cell room ventilation systems at mercury chlor-alkali plants. If an owner or operator meets the prescribed work practice standards, they can assume a mercury emission rate from the cell room of 1,300 grams per day.

While the final rule does not retain the numerical emission limitation from the 40 CFR part 61 Mercury NESHAP, the requirements in the final rule for fugitive mercury emissions from the cell room are far more stringent than the design, maintenance, and housekeeping practices allowed by the Mercury NESHAP in lieu of meeting the numerical limit. In addition, the Mercury NESHAP contained only 18 work practice requirements as compared to the more than 80 design, operation, maintenance, inspection, and required actions for repair contained in tables 1 through 4 to the final rule. The work practice standards specify the equipment and areas to be inspected along with the frequency of the inspections and conditions that trigger corrective action. Response time intervals for when the corrective actions must occur are also specified. Furthermore, some types of inspections are required at more frequent intervals than required by the Mercury NESHAP (*e.g.*, inspecting decomposers for hydrogen leaks twice per day rather than once each day). In addition, the detailed recordkeeping procedures and reporting provisions are more fully developed than those in the Mercury NESHAP, as well as requirements for storage of mercury-containing wastes.

Finally, the work practice standards contain a requirement for owners and operators to develop and implement a plan for the routine washdown of accessible surfaces in the cell room and other areas. The standards establish the duty for owners or operators to prepare and implement a written plan for washdowns and specify elements to be addressed in the plan. A requirement for washdowns is an important part of an overall approach to reducing cell room fugitive emissions.

Along with a floor-level periodic mercury monitoring program (discussed later), not only will the work practice standards in the final rule result in reduced mercury fugitive emissions (and, therefore, mercury consumption), but provide much more enforceable provisions so that an inspector can verify that they are being met.

In addition, we have calculated emission reductions for the final rule. Assuming that every facility is complying with the 1,000 grams per day limit from point sources (this value assumes that 1,300 grams per day of the 2,300 grams per day facility limit are being used for fugitive emissions), we estimate that baseline emissions from all nine existing facilities (relative to the Mercury NESHAP) are 3,285 kg/yr. We estimate that annual emissions after the application of MACT to be 217 kg/yr. Therefore, the final rule will result in emission reductions of 3,068 kg/yr, or approximately 93 percent from the existing Mercury NESHAP. This supports our position that we are not setting a standard that allows backsliding. Therefore, once the final rule compliance date ensues, sources subject to the provisions of the final rule will no longer be subject to the Mercury NESHAP.

Comment: Commenters disagreed with EPA's proposal to institute a continuous mercury monitoring program whereby owners and operators would be required to continuously monitor mercury concentration in the upper portion of each cell room and take corrective actions when elevated mercury vapor levels are detected. The commenters stated that the proposed monitoring program was seriously flawed and should be deleted from the final rule. The commenters noted that periodic monitoring done in various areas of the cell room (as currently practiced to ensure compliance with Occupational Health & Safety Administration (OSHA) permissible exposure limits) was an appropriate substitute. Several commenters stated that they would not be opposed to the continuous mercury monitoring program if the technology were field demonstrated.

In contrast, one commenter, which submitted comments after the close of the comment period, ''enthusiastically'' supported the proposed cell room monitoring program. Nonetheless, the commenter felt that it was unwise for the EPA to allow each owner/operator to set his/her own cell room action level.

Some commenters stated that cell room monitoring is redundant to the housekeeping requirements, and that the work practices required in Tables 1–5 to the proposed rule allow for sufficient opportunity to quickly detect abnormal sources of mercury emissions. Another commenter stated that the final rule should either require continuous monitoring or detailed work practice standards but not both. The commenter argued that cell room designs vary greatly. Given this variability, the commenter urged EPA to enable facilities to select the appropriate compliance strategy for individual circumstances.

Response: With regard to technical feasibility, a cell room mercury monitoring system was tested in 2000 at a mercury cell facility in Augusta, Georgia, that demonstrated that the monitoring technology can be effectively installed and operated in mercury cell chlor-alkali plant cell rooms, and this technology, along with other measures, can be an effective mechanism to identify leaking equipment and other problems that result in fugitive mercury emissions from the cell room.

We acknowledge that this success, which occurred in a limited and very controlled situation for a short time period, does not necessarily prove that similar monitoring at every mercury cell room would prove to be an effective long-term method to reduce mercury fugitive emissions. In fact, the design and operation of the Augusta facility probably represented the optimum circumstances for a mercury cell room monitoring program to be successful. We are aware that cell room designs vary greatly and recognize that the design affects the location and number of monitors necessary to accurately monitor each individual cell room. In addition, depending on the design of the roof, it may be possible that installation of monitors that adequately monitor mercury concentration would not even be possible.

Even with these limitations, a well designed and implemented cell room monitoring program can effectively reduce mercury fugitive emissions on a long-term basis. Therefore, we included this concept in the final rule.

However, we do agree with the commenters that a comprehensive continuous cell room monitoring program should be sufficient to reduce fugitive mercury emissions from the cell room without imposing the overlapping requirements of the detailed work practices. Therefore, we have concluded that it is appropriate to allow facilities to implement the continuous cell room monitoring program as an alternative to, and not in addition to, the work practice requirements. In the final rule, facilities are given the option to implement the cell room continuous monitoring program in lieu of the work practice requirements. We do, however, feel there is a need to outline more specifically the elements that must be included in the cell room monitoring program to ensure that it provides at least the same level of control as the work practices and cell room monitoring program would have provided together. Therefore, there are more prescriptive requirements in the final rule for the cell room monitoring plan option. The final rule dictates how the action level is to be established, what measures must be followed when the action level is exceeded, and what records must be kept.

Although the continuous cell room monitoring provisions are optional, some mercury monitoring to detect elevated mercury levels in the cell room is appropriate. Therefore, we have included a periodic monitoring program to be performed throughout the cell room as a substitute for continuous monitoring. The final rule contains a floor-level periodic monitoring program as part of the work practice standards.

F. What Issues Were Raised Regarding the Monitoring and Continuous Compliance Requirements?

Comment: Three commenters questioned EPA's intent in establishing emission limitations based on the initial performance test. These commenters felt that the proposed standards amounted to changing the emission limit based on the emissions observed during the performance test which amounted to ignoring the emission limit established through the rulemaking process. Two of the commenters stated that the amount of mercury emissions measured during the initial compliance performance test should be used only to verify compliance with the MACT standards, and not to establish new emission limits. The commenters were concerned that the emission limits would become floating limits based on the most recent performance test, as opposed to being MACT standards.

The commenters indicated that variations around the concentrations, above and below, measured during the performance test can be expected. Treatment systems employed to obtain compliance (*e.g.*, carbon) would be expected to show some slight deterioration after a period of operation. Therefore, a performance test conducted just after a carbon change would result in an unrealistically low operating limit. Finally, the commenters were concerned that different facilities would have different operating limits, depending on variables like the type of control equipment installed, the operating conditions on the day of the emission test (*i.e.*, mercury volatility changes significantly with temperature), and other factors. One commenter was concerned that, given the wide variability in emission constituents, operators would not be able to assure that their facilities will consistently emit within the limits established during an ideally controlled initial performance test.

Two of the commenters acknowledged that other MACT standards require the gathering of data for surrogate parameters (*e.g.*, scrubber liquor pH, scrubber liquor flow) when direct measurement of a control parameter is not required or feasible. These surrogate parameters are used to establish performance requirements for the control device. The commenters went on to say that in cases where performance requirements based on surrogate parameters were established during the performance test, the emission limitation was not modified to reflect the actual emissions experience during the test. However, the commenters stated that they felt that this is exactly what is required under the proposed rule.

One of the commenters argued that EPA's required installation of instruments directly in the vent stream to continuously monitor actual concentration of mercury and, therefore, actual mercury emissions, means that there is no need to rely on operating parameters which have been calculated for only one set of conditions.

One commenter was concerned about the cost-benefits of continuous monitoring systems (CMS) in the by-product hydrogen, end box ventilation system, and mercury thermal recovery unit vent streams. According to the commenter, the types of control devices likely to be used for controlling mercury emissions from these streams (*i.e.,* carbon or molecular sieve units) have very good performance characteristics and are not likely to incur short-term upsets. The commenter noted that performance is subject to normal variations, and the ability of these systems to absorb mercury does degrade over time. The commenter stated that before emissions reach the permit limits due to reduced performance, the beds must be replaced. The commenter requested that in lieu of CMS, facilities should be allowed to rely on the known capability of the systems to operate reliably. The commenter stated that the Agency could delete the requirement for CMS without any real harm to the environment.

Response: In general, we disagree with the premise of the commenters' argument. The proposed rule would have required that continuous compliance for each vent be determined by monitoring mercury concentration as an operating limit. The measured concentrations would not have been used to compare directly with the emission limitations. Rather, they would have provided an indication that the control device was performing in a manner consistent with the operation during the initial performance test. Therefore, the proposed requirements to establish operating limits would have established emission limitations, or resulted in changing emission limits, based on the initial performance test.

However, we do acknowledge that there is a difference in a mercury concentration operating limit and an operating limit based on surrogate parameters because the mercury concentration is obviously a direct measure of mercury emissions. In fact, we agree with the point made by the one commenter that there is no need to rely on operating parameters when a direct measurement of emissions is being required.

As discussed at length in the proposal preamble (67 FR 44690), we considered requiring mercury continuous emission monitors (CEM) that would directly measure in units of the standard. Although monitoring that directly measures compliance is preferred, we decided to propose mercury concentration operating limits based on the uncertainties associated with the cost and reliability of the mercury monitoring devices. Commenters did not provide any information to alleviate these concerns. In fact, they shared our basic concerns even if the monitoring devices were only used for operating limits.

We weighed the comments related to the mercury concentration operating limits against the concerns associated with using mercury concentration monitors as CEM. Our preference continues to be to require mercury CEM. With sufficient evaluation, analysis, and refinement, the industry will find these devices acceptable. However, we could not require these devices in the final rule without a fallback alternative if sources found that these monitoring devices were not acceptable for use within the industry.

During the development of the proposed standards, we learned that many mercury cell chlor-alkali facilities conducted periodic (*e.g.,* weekly, monthly) tests to determine the mercury content in vent streams. This is done to assess control device performance or, for the by-product hydrogen stream, to ensure product quality. These tests are not typically conducted using EPA-approved test methods, but are usually conducted using modified methods. Since this periodic testing is already being conducted at many mercury cell plants, we evaluated whether a continuous compliance option could be included in the final rule based on such periodic testing. Since such testing directly measures mercury emissions, we concluded that it would be an acceptable alternative to mercury CEM. The only question was how often such testing would be needed to ensure continuous compliance with the emission limitations. Daily testing would certainly be adequate, but we were concerned about the costs and burden associated with 365 tests each year for each process vent.

The most common final control device is (or will be) nonregenerative carbon adsorption. These fixed bed carbon devices can operate for long periods of time before a carbon change is needed. The carbon replacement frequency is often more than a year. Weekly testing would be more than sufficient to represent the emissions for the entire week and to indicate when breakthrough (*i.e.,* the point at which the carbon has become saturated with mercury emissions) is approaching. Because breakthrough does not occur instantaneously, but is slowly approached over time, weekly testing is sufficient to detect the point at which breakthrough is approaching.

However, there is the possibility that non-carbon devices such as condensers, absorbers, or regenerative molecular sieves could be used as the final control device to comply with the emission limits in the final rule. Since improper operation of these devices could result in higher emissions for short periods, we had concerns about utilizing weekly testing for these devices. However, we concluded that if parametric monitoring of surrogate parameters (*e.g.,* condenser temperature) were conducted to ensure consistent and proper operation of these devices, weekly testing would be acceptable.

Therefore, the final rule includes two options for continuous compliance for the by-product hydrogen stream, the end box ventilation system vent, and the mercury thermal recovery unit vent. The first option is continuous emissions monitoring using a mercury continuous emissions monitoring system. The second is periodic testing using Method 101, 101A, or 102 or an approved alternative method. Specifically, this second option requires that at least three acceptable test runs be conducted each week. As part of the periodic testing option, if the final control device is not a nonregenerative carbon adsorber, surrogate parameter monitoring is required.

V. What Are the Environmental, Cost, and Economic Impacts of the Final Rule?

A. What Are the Air Emission Impacts?

The level of mercury emissions allowed by the Mercury NESHAP is 2,300 grams per day. If one assumes that all nine plants in the source category emit mercury at this level, and that each operates 365 days a year, total annual potential-to-emit baseline emissions would be 7,556 kg/yr (16,658 lb/yr). Annual potential-to-emit baseline emissions for fugitive emission sources would be 4,271 kg/yr (9,416 lb/yr), based on 1,300 grams per day assumed for each plant's cell room ventilation system when the 18 design, maintenance, and housekeeping practices referenced in the Mercury NESHAP are followed. Annual potential-to-emit baseline emissions for by-product hydrogen streams, end box ventilation system vents, and mercury thermal recovery unit vents would be 3,285 kg/yr (7,242 lb/yr), based on the remaining 1,000 grams per day allowed. We estimate that the final rule will reduce industrywide mercury emissions for by-product hydrogen streams, end box ventilation system vents, and mercury thermal recovery unit vents from this annual potential-to-emit baseline to around 217 kg/yr (478 lb/yr), which is equivalent to about 93 percent reduction.

While the level of mercury emissions allowed by the Mercury NESHAP defines the potential-to-emit baseline, the sum of annual mercury emission releases from by-product hydrogen streams, end box ventilation system vents, and mercury thermal recovery vents, as estimated by mercury cell chlor-alkali plants, defines an annual actual baseline for vents of about 800 kg/yr (1,764 lb/yr). We estimate that the final rule will reduce industrywide mercury emissions for vents from this annual actual baseline to around 217 kg/yr (478 lb/yr), which is equivalent to about 73 percent reduction.

We estimate that secondary air pollution emissions will result from the production of electricity required to operate new control devices and new monitoring equipment assumed for plant vents. Assuming electricity production as based entirely on coal combustion for a worst-case scenario, we estimated plant-specific impacts for sulfur dioxide, nitrogen oxides, particulate matter, and carbon monoxide emissions. The total estimated secondary air impacts of the final requirements for point sources at the nine mercury cell chlor-alkali plants is around 2.12 mg/yr (4.67 tpy) for all pollutants combined.

We are unable to quantify the primary air emission impacts associated with the final work practice standards, so no mercury emission reduction is assumed for fugitive emission sources. However, we feel strongly that the new and more explicit requirements contained in the final standards will in fact result in mercury emission reductions beyond baseline levels. Relative to secondary impacts, we expect that secondary air pollution emissions will result from the production of electricity required to operate new monitoring equipment assumed for plant cell rooms. We estimate the secondary air impacts of the final rule for fugitive emission sources to be 0.112 mg/yr (0.124 tpy).

B. What Are the Non-Air Health, Environmental, and Energy Impacts?

We do not expect that there will be any significant adverse non-air health impacts associated with the final standards for mercury-cell chlor-alkali plants.

We estimate that an increase in the amount of mercury-containing waters will result from the heightened use of packed tower scrubbing assumed for several plant vents. The total estimated water pollution impact of the final rule for point sources is about 1.5 million liters (404 thousand gallons) of additional wastewater per year. We estimate that an increase in the amount of mercury-containing solid wastes will result with the heightened use of carbon adsorption assumed for several plant vents. The total estimated solid waste impact of the final rule for point sources is about 8.8 mg/yr (9.7 tpy) of additional mercury-containing spent carbon.

We are unable to quantify non-air environmental impacts associated with the final work practice standards, so no wastewater and solid waste impacts are assumed for fugitive emission sources.

We estimate that the final requirements for point sources will result in increased energy consumption, specifically additional fan power in conveying gas streams through new carbon adsorbers and new packed scrubbers assumed for certain plant vents and additional power consumed by new vent monitoring equipment. The total estimated energy impacts of the final requirements for point sources is about 772 thousand kW-hr/yr.

We estimate that the final requirements for fugitive emission sources will result in increased energy consumption required to operate new monitoring equipment assumed for plant cell rooms. The total estimated energy impacts of the final requirements for fugitive emission sources is about 39 thousand kW-hr/yr.

C. What Are the Cost and Economic Impacts?

For projecting cost impacts of the final rule on the mercury cell chlor-alkali industry, we estimate that all nine plants will incur costs to meet the final work practice standards and the final monitoring, recordkeeping, and reporting requirements. We estimate that seven plants will incur costs to meet the final emission limits for by-product hydrogen streams and end box ventilation system vents, and two plants will incur costs to meet the final emission limits for mercury thermal recovery units. The total estimated capital cost of the final rule for the nine mercury cell chlor-alkali plants is around $1.6 million, and the total estimated annual cost is about $1.4 million per year. Plant-specific annual costs in our estimate range from about $130,000 for the least-impacted plant to about $260,000 for the worst-impacted plant.

The purpose of the economic impact analysis is to estimate the market response of chlor-alkali production facilities to the final standards and to determine the economic effects that may result due to the final NESHAP. Chlor-alkali production jointly creates both chlorine and caustic, usually sodium hydroxide, in fixed proportions. Being joint commodities, the economic analysis considers the impacts of the final NESHAP on both the chlorine and sodium hydroxide markets.

The chlor-alkali production source category contains 43 facilities, but only nine facilities using mercury cells are directly affected by the final standards. These nine facilities are located at nine plants that are owned by seven companies.

Chlor-alkali production in mercury cells leads to potential mercury emissions from hydrogen streams, end box ventilation system vents, mercury thermal recovery units, and fugitive emission sources. The compliance costs for the final standards, therefore, relate to the purchase, installation, operation, and maintenance of pollution control equipment at the point sources, as well as the labor costs and overheads associated with observing work practices addressing fugitive emissions. The estimated total annual costs for the final NESHAP are $1.8 million. This cost estimate represents about 0.30 percent of the 1997 chlorine sales revenue for the mercury cell chlor-alkali production facilities. Furthermore, the total annual costs represent less than 0.01 percent of the revenues of owning the directly affected mercury cell chlor-alkali plants.

The economic analysis predicts minimal changes in industry outputs and the market prices of chlorine and sodium hydroxide as a result of the estimated control costs. The new market equilibrium quantities of chlorine and sodium hydroxide decrease by less than 0.1 percent. Equilibrium prices of chlorine and sodium hydroxide both rise by less than 0.1 percent due to the final standards. Based on these estimates, we conclude that the final standards are not likely to have a significant economic impact on the chlorine production industry as a whole or on secondary markets such as the labor market and foreign trade.

We performed an economic analysis to determine facility- and company-specific impacts. These economic impacts are measured by calculating the ratio of the estimated annualized compliance costs of emissions control for each entity to its revenues (*i.e.,* cost-to-sales ratio). After the cost-to-sales ratio is calculated for each entity, it is then multiplied by 100 to convert the ratio into percentages. Actual revenues at the facility level are not available, therefore, estimated facility revenues received from the sale of chlorine are used. Some of these facilities also produce caustic as potassium hydroxide, but the revenues from the sale of this product are not estimated. The nine mercury cell chlor-alkali plants have positive cost-to-sales ratios. The ratio of costs to estimated chlorine sales revenue for these facilities range from a low of 0.16 percent to a high of 1.00 percent. The average cost-to-sales ratio for the nine mercury process chlorine production facilities is 0.46 percent. More detailed economic analysis predicted minimal changes in chlorine production at each facility. Thus, overall, the economic impact of the final standards is minimal for the facilities producing chlorine.

The share of compliance costs to company sales are calculated to determine company level impacts. Since seven companies own the nine affected facilities, all seven firms face positive compliance costs from the final NESHAP. The ratio of costs to estimated revenues range from a low of less than 0.01 percent to a high of 0.22 percent, and the average ratio of costs to company revenues is 0.06 percent. Again, more detailed economic analysis at the company level predicts little change in company output or revenues. So, at the company level, the final standards are not anticipated to have a significant economic impact on companies that own and operate the chlorine production facilities.

No facility or company is expected to close as a result of the final standards, and the economic impacts to consumers are anticipated to be minimal. The generally small scale of the impacts suggests that there will also be no significant impacts on markets for the products made using chlorine or sodium hydroxide. For more information, consult the economic impact analysis report entitled ''Economic Impact Analysis for the Final Mercury Cell Chlor-Alkali Production NESHAP,'' which is available in the docket for this rulemaking.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866—Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Executive Order defines ''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 entitlements, grants, user fees, or loan programs, or the rights and obligation 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.

It has been determined that the final rule is not a ''significant regulatory action'' under the terms of Executive Order 12866 and is, therefore, not subject to OMB review.

B. Paperwork Reduction Act

The information collection requirements in the final rule have been submitted for approval to OMB under the requirements of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The information requirements are not enforceable until OMB approves them.

The information requirements are based on notifications, records, and reports required by the 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 under section 114 of the CAA (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made will be safeguarded according to Agency policies in 40 CFR part 2, subpart B, Confidentiality of Business Information.

According to the ICR, the total 3-year monitoring, reporting, and recordkeeping burden for this collection is 6,692 labor hours, and the annual average burden is 2,231 labor hours. The total annualized cost of monitoring, reporting, and recordkeeping is approximately $628,212. The labor cost over the 3-year period is $295,928 or $98,643 per year. The annualized capital cost for monitoring equipment is $262,458. Annual operation and maintenance costs are $365,754 over 3 years, averaging $121,918 per year. This estimate includes a one-time plan for demonstrating compliance, annual compliance certificate reports, notifications, and recordkeeping.

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 purpose of collecting, validating, and verifying information; process and maintain information and disclose and provide information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to respond to a collection of information; search existing 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 are listed in 40 CFR part 9 and 48 CFR chapter 15. The OMB control number(s) for the information collection requirements in the final rule will be listed in an amendment to 40 CFR part 9 or 48 CFR chapter 15 in a subsequent **Federal Register** document after OMB approves the ICR.

C. Regulatory Flexibility Act

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with the final rule. The EPA has also determined that the final rule will not have a significant economic impact on a substantial number of small entities. For purposes of assessing the impacts of today's final rule on small entities, small entity is defined as: (1) A small business according to the Small Business Administration (SBA) size standards by NAICS code, a maximum of 1,000 employees for the alkalies and chlorine manufacturing industry; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, EPA has concluded that this action will not have a significant economic impact on a substantial number of small entities. We have determined that two of the seven companies that own mercury chlor-alkali plants are small entities. Although small businesses represent 30 percent of the companies within the source category, they are expected to incur 18 percent of the total industry annual compliance costs. There are no companies with compliance costs equal to or greater than 1 percent of their sales. No firms are expected to close rather than incur the costs of compliance with the final rule.

Furthermore, firms are not projected to close their facilities due to the final rule.

Although the final rule will not have significant economic impact on a substantial number of small entities, we have nonetheless worked aggressively to minimize the impact of the final rule on small entities, consistent with our obligation under the CAA. The two companies have been active participants in the rulemaking process through their association with the industry trade organization, the Chlorine Institute. Therefore, we met with representatives of these small entities on numerous occasions. In addition, we conducted an extended visit to a mercury cell chlor-alkali plant owned by one of these companies to understand their process and emission control techniques, along with any unique impacts that might occur due to the fact that their company was a small entity. In general, the provisions of the rule were deigned to achieve the maximum emission reduction while also incorporating as many of the existing practices currently being employed by the industry. The input received from these small entities was duly considered in this evaluation.

D. Unfunded Mandates Reform Act of 1995

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, we generally must prepare a written statement, including cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to 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 us 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 us to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if we publish with the final rule an explanation why that alternative was not adopted.

Before we establish any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, we 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 our regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

We have determined that the final rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, or tribal governments, in the aggregate, or the private sector in any 1 year. The total annualized cost of the final rule has been estimated to be $1,390,000. Thus, today's final rule is not subject to the requirements of sections 202 and 205 of the UMRA. In addition, we have determined that the final rule contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no regulatory requirements that apply to such governments or impose obligations upon them. Therefore, the final rule is not subject to the requirements of section 203 of the UMRA.

E. Executive Order 13132—Federalism

Executive Order 13132, entitled ''Federalism'' (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'' are defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of Government.''

The final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of Government, as specified in Executive Order 13132. The standards apply only to mercury cell chlor-alkali plants and do not pre-exempt States from adopting more stringent standards or otherwise regulate State or local governments. Thus, Executive Order 13132 does not apply to the final rule.

Although section 6 of Executive Order 13132 does not apply to the final rule, EPA did consult with State and local officials in developing the final rule. No concerns were raised by these officials during this consultation.

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

Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (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'' are 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 the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes.''

The final rule does not have tribal implications. It 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, as specified in Executive Order 13175. This is because no tribal governments own or operate a mercury cell chlor-alkali plant. Thus, Executive Order 13175 does not apply to the final rule.

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

Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (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 Agency must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned rule is preferable to other potentially effective and reasonably feasible alternatives that we considered.

The final rule is not subject to Executive Order 13045 because it is not an economically significant regulatory action as defined by Executive Order 12866. In addition, EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health and safety risks, such that the analysis required under section

5–501 of the Executive Order has the potential to influence the regulation.

As with most rulemakings developed under section 112(d) of the CAA, the final rule is based on MACT. Risks to public health and impacts on the environment are not typically considered in the development of emissions standards under section 112(d). Rather, these risks and impacts are considered later (within 8 years after promulgation of the MACT rule) under the residual risk program as required by section 112(f) of the CAA. While we do not believe the final rule to be ''economically significant,'' as defined under Executive Order 12866, we do believe that it addresses environmental health or safety risks that may have a disproportionate effect on children.

Mercury has been identified as a priority pollutant under EPA's National Agenda to Protect Children's Health from Environmental Threats and by the Federal Children's Health Protection Advisory Committee (CHPAC). The CHPAC was formed to advise, consult with, and make recommendations to EPA on issues associated with the development of regulations to address the prevention of adverse health effects to children. One of the CHPAC's primary missions was to identify five existing EPA regulations, which if reevaluated, could lead to better protection for children. The CHPAC recommended the Mercury NESHAP for chlor-alkali plants as one of the regulations to be reevaluated considering impacts on children. We adopted the CHPAC recommendation. Therefore, we considered the impacts on children in the development of the final rule. A qualitative assessment of the potential impacts on children's health due to mercury emissions from chlor-alkali plants was presented in the preamble to the proposed rule (67 FR 44693).

Because the final rule does not meet both criteria for applicability, it is not subject to Executive Order 13045. However, based on our assessment, the final rule will help reduce the mercury exposures to humans, including children.

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

The final rule is not subject to Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act of 1995

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (Public Law No. 104–113; 15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in their regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. The NTTAA directs EPA to provide Congress, through annual reports to the OMB, with explanations when an agency does not use available and applicable voluntary consensus standards.

The final rule involves technical standards. The EPA cites in the final rule EPA Methods 1, 1A, 2, 2A, 2C, 2D, 3, 3A, 3B, 4, 5, 101, 101A, 102, and any method to measure mercury (validated with EPA Method 301). Consistent with the NTTAA, EPA conducted searches to identify voluntary consensus standards in addition to these EPA methods. No applicable voluntary consensus standards were identified for EPA Methods 1A, 2A, 2D, and 102. The search and review results have been documented and are placed in the docket (OAR–2002–0017 or A–2000–32) for the final rule.

This search for emissions monitoring procedures identified 14 voluntary consensus standards and five draft standards. The EPA determined that the 14 standards were impractical alternatives to EPA test methods for the purposes of this rulemaking. Therefore, EPA will not adopt these standards today. The reasons for this determination for these 14 standards are in the docket.

The 14 voluntary consensus standards are as follows: ASME C00031 or PTC 19–10–1981, ''Part 10 Flue and Exhaust Gas Analyses,'' for EPA Method 3; ASME PTC–38–80 R85 or C00049, ''Determination of the Concentration of Particulate Matter in Gas Streams,'' for EPA Method 5; ASTM D3154–91 (1995), ''Standard Method for Average Velocity in a Duct (Pitot Tube Method),'' for EPA Methods 1, 2, 2C, 3, 3B, and 4; ASTM D3464–96, ''Standard Test Method Average Velocity in a Duct Using a Thermal Anemometer,'' for EPA Method 2; ASTM D3685/D3685M–98, ''Test Methods for Sampling and Determination of Particulate Matter in Stack Gases,'' for EPA Method 5; ASTM D3796–90 (1998), ''Standard Practice for Calibration of Type S Pitot Tubes,'' for EPA Method 2; ASTM D5835–95, ''Standard Practice for Sampling Stationary Source Emissions for Automated Determination of Gas Concentration,'' for EPA Methods 3A; ASTM E337–84 (Reapproved 1996), ''Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures),'' for EPA Method 4; CAN/CSA Z223.1–M1977, ''Method for the Determination of Particulate Mass Flows in Enclosed Gas Streams,'' for EPA Method 5; CAN/CSA Z223.2–M86 (1986), ''Method for the Continuous Measurement of Oxygen, Carbon Dioxide, Carbon Monoxide, Sulphur Dioxide, and Oxides of Nitrogen in Enclosed Combustion Flue Gas Streams,'' for EPA Methods 3A; CAN/CSA Z223.26–M1987, ''Measurement of Total Mercury in Air Cold Vapour Atomic Absorption Spectrophotometeric Method,'' for EPA Methods 101 and 101A; ISO 9096:1992 (in review 2000), ''Determination of Concentration and Mass Flow Rate of Particulate Matter in Gas Carrying Ducts—Manual Gravimetric Method,'' for EPA Method 5; ISO 10396:1993, ''Stationary Source Emissions: Sampling for the Automated Determination of Gas Concentrations,'' for EPA Method 3A; ISO 10780:1994, ''Stationary Source Emissions—Measurement of Velocity and Volume Flowrate of Gas Streams in Ducts,'' for EPA Method 2.

The following five standards identified in this search were not available at the time the review was conducted for the purposes of this rulemaking because they are under development by a voluntary consensus body: ASME/BSR MFC 12M, ''Flow in Closed Conduits Using Multiport Averaging Pitot Primary Flowmeters,'' for EPA Method 2; ASME/BSR MFC 13M, ''Flow Measurement by Velocity Traverse,'' for EPA Method 2 (and possibly 1); ISO/DIS 12039, ''Stationary Source Emissions—Determination of Carbon Monoxide, Carbon Dioxide, and Oxygen—Automated Methods,'' for EPA Method 3A; PREN 13211 (1998), ''Air Quality—Stationary Source Emissions—Determination of the Concentration of Total Mercury,'' for EPA Methods 101, 101A (and mercury portion of EPA Method 29); and ASTM Z6590Z, ''Manual Method for Both Speciated and Elemental Mercury'' is a potential alternative for portions of EPA Methods 101A and Method 29 (mercury portion only).

Section 63.8232 of the final rule lists the EPA testing methods included in the final rule. Under 40 CFR 63.7(f) and 63.8(f), a source may apply to EPA for permission to use alternative test methods or alternative monitoring requirements in place of any of the EPA testing methods, performance specifications, or procedures.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). The final rule will be effective on December 19, 2003.

List of Subjects in 40 CFR Part 63

Environmental protection, Administrative practice and procedure, Air pollution control, Hazardous substances, Intergovernmental relations, Recordkeeping and reporting requirements.

Dated: August 25, 2003.

Marianne Lamont Horinko,

Acting Administrator.

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

PART 63—[AMENDED]

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

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

■ 2. Part 63 is amended by adding subpart IIIII to read as follows:

Subpart IIIII—National Emission Standards for Hazardous Air Pollutants: Mercury Emissions From Mercury Cell Chlor-Alkali Plants

Sec.

What This Subpart Covers

§ 63.8180 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for affected sources of mercury emissions at mercury cell chlor-alkali plants. This subpart also establishes requirements to demonstrate initial and continuous compliance with all applicable emission limitations and work practice standards in this subpart.

§ 63.8182 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate a mercury cell chlor-alkali plant.

(b) You are required to obtain a title V permit, whether your affected source is a part of a major source of hazardous air pollutant (HAP) emissions or a part of an area source of HAP emissions. A major source of HAP is a source that emits or has 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. An area source of HAP is a source that has the potential to emit HAP but is not a major source. Nothing in this subpart revises how affected sources are aggregated for purposes of determining whether an affected source is a part of an area, nonmajor, or major source under any provisions of the Clean Air Act (CAA) or EPA's regulations. For information on aggregating affected sources to determine what is a source under title V, see the definition of major source in 40 CFR 70.2, 71.2 and 63.2.

(c) Beginning on December 19, 2006, the provisions of subpart E of 40 CFR part 61 that apply to mercury chlor-alkali plants, which are listed in paragraphs (c)(1) through (3) of this section, are no longer applicable.

(1) § 61.52(a);

(2) § 61.53(b) and (c); and

(3) § 61.55(b), (c) and (d).

§ 63.8184 What parts of my plant does this subpart cover?

(a) This subpart applies to each affected source at a plant site where chlorine and caustic are produced in mercury cells. This subpart applies to two types of affected sources: the mercury cell chlor-alkali production facility, as defined in paragraph (a)(1) of this section; and the mercury recovery facility, as defined in paragraph (a)(2) of this section.

(1) The mercury cell chlor-alkali production facility designates an affected source consisting of all cell rooms and ancillary operations used in the manufacture of product chlorine, product caustic, and by-product hydrogen at a plant site. This subpart covers mercury emissions from by-product hydrogen streams, end box ventilation system vents, and fugitive emission sources associated with cell rooms, hydrogen systems, caustic systems, and storage areas for mercury-containing wastes.

(2) The mercury recovery facility designates an affected source consisting of all processes and associated operations needed for mercury recovery from wastes at a plant site. This subpart covers mercury emissions from mercury thermal recovery unit vents and fugitive emission sources associated with storage areas for mercury-containing wastes.

(b) An affected source at your mercury cell chlor-alkali plant is existing if you commenced construction of the affected source before July 3, 2002.

(c) A mercury recovery facility is a new affected source if you commence construction or reconstruction of the affected source after July 3, 2002. An affected source is reconstructed if it meets the definition of ''reconstruction'' in § 63.2.

§ 63.8186 When do I have to comply with this subpart?

(a) If you have an existing affected source, you must comply with each emission limitation, work practice standard, and recordkeeping and reporting requirement in this subpart that applies to you no later than December 19, 2006.

(b) If you have a new or reconstructed mercury recovery facility and its initial startup date is on or before December 19, 2003, you must comply with each emission limitation, work practice standard, and recordkeeping and reporting requirement in this subpart that applies to you by December 19, 2003.

(c) If you have a new or reconstructed mercury recovery facility and its initial startup date is after December 19, 2003, you must comply with each emission limitation, work practice standard, and recordkeeping and reporting requirement in this subpart that applies to you upon initial startup.

(d) You must meet the notification and schedule requirements in § 63.8252. Several of these notifications must be submitted before the compliance date for your affected source(s).

Emission Limitations and Work Practice Standards

§ 63.8190 What emission limitations must I meet?

(a) *Emission limits.* You must meet each emission limit in paragraphs (a)(1) through (3) of this section that applies to you.

(1) New or reconstructed mercury cell chlor-alkali production facility. Emissions of mercury are prohibited from a new or reconstructed mercury cell chlor-alkali production facility.

(2) Existing mercury cell chlor-alkali production facility. During any consecutive 52-week period, you must not discharge to the atmosphere total mercury emissions in excess of the applicable limit in paragraph (a)(2)(i) or (ii) of this section calculated using the procedures in § 63.8243(a).

(i) 0.076 grams of mercury per megagram of chlorine produced (1.5×10^{-4} pounds of mercury per ton of chlorine produced) from all by-product hydrogen streams and all end box ventilation system vents when both types of emission points are present.

(ii) 0.033 grams of mercury per megagram of chlorine produced (6.59×10^{-5} pounds of mercury per ton of chlorine produced) from all by-product hydrogen streams when end box ventilation systems are not present.

(3) New, reconstructed, or existing mercury recovery facility. You must not discharge to the atmosphere mercury emissions in excess of the applicable limit in paragraph (a)(3)(i) or (ii) of this section.

(i) 23 milligrams per dry standard cubic meter from each oven type mercury thermal recovery unit vent.

(ii) 4 milligrams per dry standard cubic meter from each non-oven type mercury thermal recovery unit vent.

(b) [Reserved]

§ 63.8192 What work practice standards must I meet?

You must meet the work practice requirements specified in paragraphs (a) through (f) of this section. As an alternative to the requirements specified in paragraphs (a) through (d) of this section, you may choose to comply with paragraph (g) of this section.

(a) You must meet the work practice standards in Tables 1 through 4 to this subpart, except as specified in paragraph (g) of this section.

(b) You must adhere to the response intervals specified in Tables 1 through 4 to this subpart at all times. Nonadherence to the intervals in Tables 1 through 4 to this subpart constitutes a deviation and must be documented and reported in the compliance report, as required by § 63.8254(b), with the date and time of the deviation, cause of the deviation, a description of the conditions, and time actual compliance was achieved.

(c) As provided in § 63.6(g), you may request to use an alternative to the work practice standards in Tables 1 through 4 to this subpart.

(d) You must institute a floor-level mercury vapor measurement program to limit the amount of mercury vapor in the cell room environment through periodic measurement of mercury vapor levels and actions to be taken when a floor-level mercury concentration action level is exceeded. The program must meet the requirements listed in paragraphs (d)(1) through (4) of this section. As specified in § 63.8252(e)(1)(i) to implement this program, you must prepare and submit to the Administrator a floor-level mercury vapor measurement plan which must contain the elements listed in Table 5 to this subpart.

(1) You must utilize a mercury measurement device described in of Table 6 to this subpart to measure the level of mercury vapor in the cell room at floor-level.

(2) You must conduct at least one floor-level mercury vapor measurement evaluation each half day. This evaluation must include three measurements of the mercury concentration at locations representative of the entire cell room floor area. The average of these measurements must be recorded as specified in § 63.8156(c)(1). At a minimum, you must measure the level of mercury vapor above mercury-containing cell room equipment, as well as areas around the cells, decomposers, or other mercury-containing equipment.

(3) You must establish a floor-level mercury concentration action level that is no higher than 0.05 milligrams per cubic meter (mg/m^3).

(4) If a mercury concentration greater than the action level is measured during any floor-level mercury vapor measurement evaluation, you must meet the requirements in either paragraph (d)(4)(i) or (ii) of this section.

(i) If you determine that the cause of the elevated mercury concentration is an open electrolyzer, decomposer, or other maintenance activity, you must record the information specified in paragraphs (d)(4)(i)(A) through (C) of this section.

(A) A description of the maintenance activity resulting in elevated mercury concentration;

(B) The time the maintenance activity was initiated and completed; and

(C) A detailed explanation how all the applicable requirements of Table 1 to this subpart were met during the maintenance activity.

(ii) If you determine that the cause of the elevated mercury concentration is not an open electrolyzer, decomposer, or other maintenance activity, you must follow the procedures specified in paragraphs (d)(4)(ii)(A) and (B) of this section until the floor-level mercury concentration falls below the floor-level mercury concentration action level. You must also keep all the associated records for these procedures as specified in Table 9 to this subpart.

(A) Within 1 hour of the time the floor-level mercury concentration action level was exceeded, you must conduct each inspection specified in Table 2 to this subpart in the area where the concentration higher than the floor-level mercury concentration action level was measured, with the exception of the cell room floor and the pillars and beam inspections. (B) You must also inspect all decomposers, hydrogen system piping up to the hydrogen header, and other potential locations of mercury vapor leaks in the area using a technique specified in Table 6 to this subpart. You must correct any problem identified during these inspections according to the requirements in Tables 2 and 3 to this subpart.

(e) You must prepare, submit, and operate according to a written washdown plan designed to minimize fugitive mercury emissions through routine washing of surfaces where liquid mercury could accumulate. The written plan must address the elements contained in Table 7 to this subpart.

(f) You must keep records of the mass of all virgin mercury added to cells on an annual basis.

(g) As an alternative to the work practice standards in paragraphs (a) through (d) of this section, you may institute a cell room monitoring program to continuously monitor the mercury vapor concentration in the upper portion of each cell room and to take corrective actions as quickly as possible when elevated mercury vapor levels are detected. As specified in § 63.8252(e)(1)(iv), if you choose this option, you must prepare and submit to the Administrator, a cell room monitoring plan containing the elements listed in Table 5 to this subpart and meet the requirements in paragraphs (g)(1) through (4) of this section.

(1) You must utilize mercury monitoring systems that meet the requirements of Table 8 to this subpart.

(2) You must establish an action level according to the requirements in paragraphs (g)(2)(i) through (iii) of this section.

(i) Beginning on the compliance date specified for your affected source in § 63.8186, measure and record the mercury concentration for at least 30 days using a system that meets the requirements of paragraph (g)(1) of this section.

(ii) Using the monitoring data collected according to paragraph (g)(1)(i) of this section, establish your action level at the 75th percentile of the data set.

(iii) Submit your action level as part of your Notification of Compliance Status report according to § 63.8252(e)(1).

(3) Beginning on the compliance date specified for your affected source in § 63.8186, you must continuously monitor the mercury concentration in the cell room. Failure to monitor and record the data according to § 63.8256(c)(4)(ii) for 75 percent of the time in any 6-month period constitutes a deviation.

(4) If the average mercury concentration for any 1-hour period exceeds the action level established according to paragraph (g)(2) of this section, you must meet the requirements in either paragraph (g)(4)(i) or (ii) of this section.

(i) If you determine that the cause of the elevated mercury concentration is an open electrolyzer, decomposer, or other maintenance activity, you must record the information specified in paragraphs (g)(4)(i)(A) through (C) of this section.

(A) A description of the maintenance activity resulting in elevated mercury concentration;

(B) The time the maintenance activity was initiated and completed; and

(C) A detailed explanation how all the applicable requirements of Table 1 to this subpart were met during the maintenance activity.

(ii) If you determine that the cause of the elevated mercury concentration is not an open electrolyzer, decomposer, or other maintenance activity, you must follow the procedures specified in paragraphs (g)(4)(ii)(A) and (B) of this section until the mercury concentration falls below the action level. You must also keep all the associated records for these procedures as specified in Table 9 to this subpart.

(A) Within 1 hour of the time the action level was exceeded, you must conduct each inspection specified in Table 2 to this subpart, with the exception of the cell room floor and the pillars and beam inspections. You must correct any problem identified during these inspections in accordance with the requirements in Table 2 and 3 to this subpart.

(B) If the Table 2 inspections and subsequent corrective actions do not reduce the mercury concentration below the action level, you must inspect all decomposers, hydrogen system piping up to the hydrogen header, and other potential locations of mercury vapor leaks using a technique specified in Table 6 to this subpart. If a mercury vapor leak is identified, you must take the appropriate action specified in Table 3 to this subpart.

Operation and Maintenance Requirements

§ 63.8222 What are my operation and maintenance requirements?

As required by § 63.6(e)(1)(i), you must always operate and maintain your affected source(s), including air pollution control and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

General Compliance Requirements

§ 63.8226 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the applicable emission limitations for by-product hydrogen streams, end box ventilation system vents, and mercury thermal recovery unit vents in § 63.8190 at all times, except during periods of startup, shutdown, and malfunction. You must be in compliance with the applicable work practice standards in § 63.8192 at all times, except during periods of startup, shutdown, and malfunction.

(b) You must develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in § 63.6(e)(3).

Initial Compliance Requirements

§ 63.8230 By what date must I conduct performance tests or other initial compliance demonstrations?

(a) You must conduct a performance test no later than the compliance date that is specified in § 63.8186 for your affected source to demonstrate initial compliance with the applicable emission limit in § 63.8190(a)(2) for by-product hydrogen streams and end box ventilation system vents and the applicable emission limit in § 63.8190(a)(3) for mercury thermal recovery unit vents.

(b) For the applicable work practice standards in § 63.8192, you must demonstrate initial compliance within 30 calendar days after the compliance date that is specified for your affected source in § 63.8186.

§ 63.8232 What test methods and other procedures must I use to demonstrate initial compliance with the emission limits?

You must conduct a performance test for each by-product hydrogen stream, end box ventilation system vent, and mercury thermal recovery unit vent according to the requirements in § 63.7(e)(1) and the conditions detailed in paragraphs (a) through (d) of this section.

(a) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 63.7(e)(1).

(b) For each performance test, you must develop a site-specific test plan in accordance with § 63.7(c)(2).

(c) You must conduct at least three test runs to comprise a performance test, as specified in § 63.7(e)(3) and in either paragraph (c)(1) or (2) of this section.

(1) The sampling time and sampling volume for each run must be at least 2 hours and 1.70 dry standard cubic meters (dscm). Mercury results below the analytical laboratory's detection limit must be reported using the reported analytical detection limit to calculate the sample concentration value and, in turn, the emission rate in the units of the standard; or

(2) The sampling time for each test run must be at least 2 hours and the mercury concentration in each field sample analyzed must be at least two times the reported analytical detection limit.

(d) You must use the test methods specified in paragraphs (d)(1) through (4) of this section and the applicable test methods in paragraphs (d)(5) through (7) of this section.

(1) Method 1 or 1A in appendix A of 40 CFR part 60 to determine the sampling port locations and the location and required number of sampling traverse points.

(2) Method 2, 2A, 2C, or 2D in appendix A of 40 CFR part 60 to determine the stack gas velocity and volumetric flow rate.

(3) Method 3, 3A, or 3B in appendix A of 40 CFR part 60 to determine the stack gas molecular weight.

(4) Method 4 in appendix A of 40 CFR part 60 to determine the stack gas moisture content.

(5) For each by-product hydrogen stream, Method 102 in appendix A of 40 CFR part 61 to measure the mercury emission rate after the last control device.

(6) For each end box ventilation system vent, Method 101 or 101A in appendix A of 40 CFR part 61 to measure the mercury emission rate after the last control device.

(7) For each mercury thermal recovery unit vent, Method 101 or 101A in appendix A of 40 CFR part 61 to measure the mercury emission rate after the last control device.

(e) During each test run for a by-product hydrogen stream and each test run for an end box ventilation system vent, you must continuously measure the electric current through the operating mercury cells and record a measurement at least once every 15 minutes.

(f) If the final control device is not a nonregenerable carbon adsorber and if you are demonstrating compliance using periodic monitoring under § 63.8240(b), you must continuously monitor the parameters listed in paragraph (f)(1) of this section and establish your maximum or minimum monitoring value (as appropriate for your control device) using the requirements in paragraph (f)(2) of this section.

(1) During the performance test specified in paragraphs (a) through (d) of this section, you must continuously monitor the control device parameters in paragraphs (f)(1)(i) through (vii) of this section and record a measurement at least once every 15 minutes.

(i) The exit gas temperature from uncontrolled streams;

(ii) The outlet temperature of the gas stream for the final (*i.e.*, the farthest downstream) cooling system when no control devices other than coolers or demisters are used;

(iii) The outlet temperature of the gas stream from the final cooling system when the cooling system is followed by a molecular sieve or regenerative carbon adsorber;

(iv) Outlet concentration of available chlorine, pH, liquid flow rate, and inlet gas temperature of chlorinated brine scrubbers and hypochlorite scrubbers;

(v) The liquid flow rate and exit gas temperature for water scrubbers;

(vi) The inlet gas temperature of regenerative carbon adsorption systems; and

(vii) The temperature during the heating phase of the regeneration cycle for carbon adsorbers or molecular sieves.

(2) To establish a maximum monitoring value or minimum monitoring value, as appropriate for your final control device, you must average the recorded parameters in paragraphs (f)(1)(i) through (vi) of this section over the test period. If your final control device is a regenerative carbon adsorber, you must use the highest temperature reading measured in paragraph (f)(1)(vii) as the reference temperature in § 63.8244(b)(2)(v).

§ 63.8234 What equations and procedures must I use for the initial compliance demonstration?

(a) *By-product hydrogen streams and end box ventilation system vents.* You must determine the total grams of mercury per Megagram of chlorine production (g Hg/Mg Cl_2) of chlorine produced from all by-product hydrogen streams and all end box ventilation system vents, if applicable, at a mercury cell chlor-alkali production facility, and you must follow the procedures in paragraphs (a)(1) through (6) of this section.

(1) Determine the mercury emission rate for each test run in grams per day for each by-product hydrogen stream and for each end box ventilation system vent, if applicable, from Method 101, 101A, or 102 (40 CFR part 61, appendix A).

(2) Calculate the average measured electric current through the operating mercury cells during each test run for each by-product hydrogen stream and for each end box ventilation system vent, if applicable, using Equation 1 of this section as follows:

$$CL_{avg,\ run} = \frac{\sum_{i=1}^{n} CL_{i,\ run}}{n} \qquad \text{(Eq. 1)}$$

Where:

$CL_{avg,\ run}$ = Average measured cell line current load during the test run, amperes;

$CL_{i,\ run}$ = Individual cell line current load measurement (*i.e.*, 15 minute reading) during the test run, amperes; and

n = Number of cell line current load measurements taken over the duration of the test run.

(3) Calculate the amount of chlorine produced during each test run for each by-product hydrogen stream and for each end box ventilation system vent, if applicable, using Equation 2 of this section as follows:

$$P_{Cl_2,\,run} = \left(1.3\times10^{-6}\right)\left(CL_{avg,\,run}\right)\left(n_{cells,\,run}\right)\left(t_{run}\right) \qquad \text{(Eq. 2)}$$

Where:

$P_{Cl_2,run}$ = Amount of chlorine produced during the test run, megagrams chlorine (Mg Cl_2);

1.3×10^{-6} = Theoretical chlorine production rate factor, Mg Cl_2 per hour per ampere per cell;

$CL_{avg,run}$ = Average measured cell line current load during test run, amperes, calculated using Equation 1 of this section;

$n_{cell,run}$ = Number of cells on-line during the test run; and

t_{run} = Duration of test run, hours.

(4) Calculate the mercury emission rate in grams of mercury per megagram of chlorine produced for each test run for each by-product hydrogen stream and for each end box ventilation system vent, if applicable, using Equation 3 of this section as follows:

$$E_{Hg,\,run} = \left[\frac{\left(R_{run}\right)\left(t_{run}\right)}{(24)\left(P_{Cl_2,\,run}\right)}\right] \qquad \text{(Eq. 3)}$$

Where:

$E_{Hg,run}$ = Mercury emission rate for the test run, g Hg/Mg Cl_2;

R_{run} = Measured mercury emission rate for the test run from paragraph (a)(1) of this section, grams Hg per day;

t_{run} = Duration of test run, hours;

24 = Conversion factor, hours per day; and

$P_{Cl_2,run}$ = Amount of chlorine produced during the test run, calculated using Equation 2 of this section, Mg Cl_2.

(5) Calculate the average mercury emission rate for each by-product hydrogen stream and for each end box ventilation system vent, if applicable, using Equation 4 of this section as follows:

$$E_{Hg,\,avg} = \frac{\sum_{i=1}^{n} E_{Hg,\,run}}{n} \qquad \text{(Eq. 4)}$$

Where:

$E_{Hg,avg}$ = Average mercury emission rate for the by-product hydrogen stream or the end box ventilation system vent, if applicable, g Hg/Mg Cl_2;

$E_{Hg,run}$ = Mercury emission rate for each test run for the by-product hydrogen stream or the end box ventilation system vent, if applicable, g Hg/Mg Cl_2, calculated using Equation 3 of this section; and

n = Number of test runs conducted for the by-product hydrogen stream or the end box ventilation system vent, if applicable.

(6) Calculate the total mercury emission rate from all by-product hydrogen streams and all end box ventilation system vents, if applicable, at the mercury cell chlor-alkali production facility using Equation 5 of this section as follows:

$$E_{Hg,\,H_2EB} = \sum_{i=1}^{n} E_{Hg,\,avg} \qquad \text{(Eq. 5)}$$

Where:

E_{Hg,H_2EB} = Total mercury emission rate from all by-product hydrogen streams and all end box ventilation system vents, if applicable, at the affected source, g Hg/Mg Cl_2;

$E_{Hg,avg}$ = Average mercury emission rate for each by-product hydrogen stream and each end box ventilation system vent, if applicable, g Hg/Mg Cl_2, determined using Equation 4 of this section; and

n = Total number of by-product hydrogen streams and end box ventilation system vents at the affected source.

(b) *Mercury thermal recovery vents.* You must determine the milligrams of mercury per dscm exhaust discharged from mercury thermal recovery unit vents, using the procedures in paragraphs (b)(1) and (2) of this section.

(1) Calculate the concentration of mercury in milligrams of mercury per dscm of exhaust for each test run for each mercury thermal recovery unit vent using Equation 6 of this section as follows:

$$C_{Hg,\,run} = \left[\frac{\left(m_{Hg}\right)\left(10^{-3}\right)}{\left(V_{m(std)}\right)}\right] \qquad \text{(Eq. 6)}$$

Where:

$C_{Hg,run}$ = Mercury concentration for the test run, milligrams of mercury per dry standard cubic meter of exhaust;

m_{Hg} = Mass of mercury in test run sample, from Method 101, 101A, or 102, micrograms;

10-3 = Conversion factor, milligrams per microgram; and

$V_{m(std)}$ = Dry gas sample volume at standard conditions, from Method 101, 101A, or 102, dry standard cubic meters.

(2) Calculate the average concentration of mercury in each mercury thermal recovery unit vent exhaust using Equation 7 of this section as follows:

$$C_{Hg,\,avg} = \frac{\sum_{i=1}^{n} C_{Hg,\,run}}{n} \qquad \text{(Eq. 7)}$$

Where:

$C_{Hg,avg}$ = Average mercury concentration for the mercury thermal recovery unit vent, milligrams of mercury per dry standard cubic meter exhaust;

$C_{Hg,run}$ = Mercury concentration for each test run, milligrams of mercury per dry standard cubic meter of exhaust, calculated using Equation 6 of this section; and

n = Number of test runs conducted for the mercury thermal recovery unit vent.

§ 63.8236 How do I demonstrate initial compliance with the emission limitations and work practice standards?

(a) For each mercury cell chlor-alkali production facility, you have demonstrated initial compliance with the applicable emission limit for by-product hydrogen streams and end box ventilation system vents in § 63.8190(a)(2) if you comply with paragraphs (a)(1) and (2) of this section:

(1) Total mercury emission rate from all by-product hydrogen streams and all end box ventilation system vents, if applicable, at the affected source, determined according to §§ 63.8232 and 63.8234(a), did not exceed the applicable emission limit in § 63.8190(a)(2)(i) or (ii); and

(2) If you have chosen the periodic monitoring option specified in § 63.8240(b) and your final control device is not a nonregenerable carbon adsorber, you have established a parameter value according to § 63.8232(f)(2).

(b) For each mercury recovery facility, you have demonstrated initial compliance with the applicable emission limit for mercury thermal recovery unit vents in § 63.8190(a)(3) if you comply with paragraphs (b)(1) and (2) of this section.

(1) Mercury concentration in each mercury thermal recovery unit vent exhaust, determined according to §§ 63.8232 and 63.8234(b), did not exceed the applicable emission limit in § 63.8190(a)(3)(i) or (ii); and

(2) If you have chosen the periodic monitoring option in § 63.8240(b) and have a final control device that is not a nonregenerable carbon adsorber, you

have established a maximum or minimum monitoring value, as appropriate for your control device according to § 63.8232(f)(2).

(c) For each affected source, you have demonstrated initial compliance with the applicable work practice standards in § 63.8192 if you comply with paragraphs (c)(1) through (7) of this section.

(1) You certify in your Notification of Compliance Status that you are operating according to the work practice standards in § 63.8192(a) through (d).

(2) You choose the continuous cell room monitoring program option, you certify in your Notification of Compliance Status that you are operating according to the continuous cell room monitoring program under § 63.8192(g) and you have established your action level according to § 63.8192(g)(2).

(3) You certify in your Notification of Compliance Status that you are operating according to your washdown plan.

(4) You have submitted your washdown plan as part of your Notification of Compliance Status.

(5) You have submitted your continuous cell room monitoring plan, if applicable, as part of your Notification of Compliance Status.

(6) You have submitted your floor-level cell room monitoring plan, if applicable, as part of your Notification of Compliance Status.

(7) You have submitted records of the mass of virgin mercury added to cells for the 5 years preceding the applicable compliance date for your affected source as a part of the Notification of Compliance Status.

(d) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.8252(e).

Continuous Compliance Requirements

§ 63.8240 What are my monitoring requirements?

For each by-product hydrogen stream, each end box ventilation system vent, and each mercury thermal recovery unit vent, you must monitor the mercury emissions using the procedures in paragraph (a) or (b) of this section.

(a) You must continuously monitor the mercury concentration using a mercury continuous emissions monitor according to the requirements in §§ 63.8242(a) and 63.8244(a); or

(b) You must periodically monitor the mercury emissions according to the requirements in §§ 63.8242(b) and 63.8244(b).

§ 63.8242 What are the installation, operation, and maintenance requirements for my continuous monitoring systems?

(a) If you choose the continuous mercury monitoring option under § 63.8240(a), you must install, operate, and maintain each mercury continuous emissions monitor according to paragraphs (a)(1) through (5) of this section.

(1) Each mercury continuous emissions monitor must sample, analyze, and record the concentration of mercury at least once every 15 minutes.

(2) Each mercury continuous emissions monitor analyzer must have a detector with the capability to detect a mercury concentration at or below 0.5 times the mercury concentration level measured during the performance test conducted according to § 63.8232.

(3) In lieu of a promulgated performance specification as required in § 63.8(a)(2), you must develop a site-specific monitoring plan that addresses the elements in paragraphs (a)(3)(i) through (vi) of this section.

(i) Installation and measurement location downstream of the final control device for each by-product hydrogen stream, end box ventilation system vent, and mercury thermal recovery unit vent.

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration analyzer, and the data collection and reduction system.

(iii) Performance evaluation procedures and acceptance criteria (*i.e.*, calibrations).

(iv) Ongoing operation and maintenance procedures according to the requirements of § 63.8(c)(1), (3), and (4)(ii).

(v) Ongoing data quality assurance procedures according to the requirements of § 63.8(d).

(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c), (e)(1), and (e)(2)(i).

(4) You must conduct a performance evaluation of each mercury continuous emissions monitor according to your site-specific monitoring plan.

(5) You must operate and maintain each mercury continuous emissions monitor in continuous operation according to the site-specific monitoring plan.

(b) If you choose the periodic monitoring option and your final control device is not a nonregenerable carbon adsorber, you must install, operate, and maintain a continuous parameter monitoring system (CPMS) for each parameter specified in § 63.8232(f)(1), according to § 63.8(c).

§ 63.8243 What equations and procedures must I use to demonstrate continuous compliance?

(a) *By-product hydrogen streams and end box ventilation system vents.* For each consecutive 52-week period, you must determine the g Hg/Mg Cl_2 produced from all by-product hydrogen streams and all end box ventilation system vents, if applicable, at a mercury cell chlor-alkali production facility using the procedures in paragraphs (a)(1) through (3) of this section. You must begin collecting data on the compliance date that is specified in § 63.8186 for your affected source and calculate your first 52-week average mercury emission rate at the end of the 52nd week after the compliance date.

(1) Each week, you must determine the weekly mercury emission rate in grams per week for each by-product hydrogen stream and for each end box ventilation system vent, if applicable, using one of the monitoring options in paragraph (a)(1)(i) or (ii) of this section.

(i) Continuous mercury monitoring according to §§ 63.8242 and 63.8244(a).

(ii) Periodic monitoring according to § 63.8244(b).

(2) Each week, you must determine the chlorine production and keep records of the production rate as required under § 63.8256(b)(6).

(3) Beginning 52 weeks after the compliance date specified in § 63.8186 for your affected source, you must calculate the 52-week average mercury emission rate from all by-product hydrogen steam and all end box ventilation system vents, if applicable, using Equation 1 of this section as follows:

$$E_{Hg} = \sum_{i=1}^{52} \left[\frac{\left(R_{week_i}\right)}{\left(P_{Cl_2,week_i}\right)} \right] \quad \text{(Eq. 1)}$$

Where:

E_{Hg} = 52-week average mercury emission rate for $week_i$, g Hg/Mg Cl_2;

$R_{week,\,i}$ = Mercury emission rate for $week_i$ from paragraph (a)(1) of this section, g Hg per week;

$P_{Cl2,\,weeki}$ = Amount of chlorine produced during $week_i$, from paragraph (a)(2) of this section, Mg Cl_2 per week.

(b) *Mercury thermal recovery units.* If you choose the continuous monitoring option in § 63.8240(a), you must demonstrate continuous compliance using paragraph (b)(1) of this section. If you choose the periodic monitoring option in § 63.8240(b), you must demonstrate continuous compliance using paragraph (b)(2) of this section.

(1) You must calculate the daily average mercury concentration using Equation 2 of this section as follows:

$$C_{Hg,\,dailyavg} = \frac{\left(\sum_{i=1}^{n} C_{Hg,\,i}\right)}{n} \quad \text{(Eq. 2)}$$

Where:

$C_{Hg,\,dailyavg}$ = Average mercury concentration for the operating day, milligrams per dry standard cubic meter;

$C_{Hg,i}$ = Concentration of mercury measured at the interval i (*i.e.,* 15 minute reading) using a mercury continuous emission monitor, milligrams per dry standard cubic meter; and

n = Number of concentration measurements taken during the operating day.

(2) You must calculate the daily average mercury concentration using the procedures in § 63.8234(b).

§ 63.8244 How do I monitor and collect data to demonstrate continuous compliance?

(a) *Continuous monitoring option.* You must monitor mercury concentration according to § 63.8242(a) at all times that the affected source is operating with the exception of paragraphs (a)(1) and (2) of this section.

(1) Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must monitor mercury emissions continuously (or collect data at all required intervals) at all times that the affected source is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(2) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels or to fulfill a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance.

(b) *Periodic monitoring option.* If you choose the periodic monitoring option under § 63.8240(b), you must monitor according to the procedures in paragraph (b)(1) or (2) of this section.

(1) If your final control device is a nonregenerable carbon adsorber, then you must conduct at least three test runs per week meeting the criteria specified in § 63.8232(c)(1) and (2) to measure mercury emissions using the test methods specified in § 63.8232(d). Alternatively, you may use any other method that has been validated using the applicable procedures in Method 301, 40 CFR part 63, appendix A.

(2) If your final control device is anything other than a nonregenerable carbon adsorber, you must monitor according to the requirements of paragraphs (b)(2)(i) through (v) of this section.

(i) You must conduct at least three test runs per week meeting the criteria specified in § 63.8232(c)(1) and (2) to measure mercury emissions using the test methods specified in § 63.8232(d). Alternatively, you may use any other method that has been validated using the applicable procedures in Method 301, 40 CFR part 63, appendix A.

(ii) Except as specified in paragraph (b)(2)(iii) of this section, you must continuously collect data at least once every 15 minutes using a CPMS installed and operated according to § 63.8242(b) and record each 1-hour average from all measured data values during each 1-hour period for the applicable parameter identified in § 63.8232(f)(1) using the methods specified in § 63.8244(a).

(iii) As appropriate, you must continuously monitor the temperature specified in § 63.8232(f)(1)(vii) during each heating phase of the regeneration cycle of your carbon adsorber.

(iv) If the hourly average monitoring value of any applicable parameter recorded under paragraph (b)(2)(ii) of this section is below the minimum monitoring value or above the maximum monitoring value of that same parameter established under § 63.8232(f)(2) for 24 consecutive hours, your monitoring value is out of range and you must take corrective action as soon as practicable. The hourly average monitoring value must be above the minimum monitoring value or below the maximum monitoring value as appropriate for that parameter, within 48 hours of the period that the monitoring value is out of range.

(v) If your final control device is a regenerative carbon adsorber, when the maximum hourly value of the temperature measured according to paragraph (b)(2)(iii) of this section is below the reference temperature determined according to § 63.8232(f)(2) for three consecutive regeneration cycles, your monitoring value is out of range and you must take corrective action as soon as practicable. During the first regeneration cycle following the period that your monitoring value is out of range, the maximum hourly value must be above the reference temperature recorded according to § 63.8232(f)(2).

§ 63.8246 How do I demonstrate continuous compliance with the emission limitations and work practice standards?

(a) *By-product hydrogen streams and end box ventilation system vents.* (1) For all by-product hydrogen streams and all end box ventilation system vents, if applicable, you must demonstrate continuous compliance with the applicable mercury emission limit by reducing the mercury emissions data to 52-week averages using Equation 1 of § 63.8243 and maintaining the 52-week average mercury emissions no higher than the applicable mercury emissions limit in § 63.8190(a)(2). To obtain the data to calculate these 52-week averages, you must monitor in accordance with paragraph (a)(1)(i) or (ii) of this section.

(i) *Continuous monitoring option.* You must collect mercury emissions data according to § 63.8244(a), representing at least 75 percent of the 15-minute periods in each operating day of the 52-week compliance period (with data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities not counting toward the 75 percent requirement);

(ii) *Periodic monitoring option.* You must conduct at least three test runs per week to collect mercury emissions samples according to § 63.8244(b)(1) and (2)(i) and, if your final control device is not a nonregenerable carbon adsorber, you must collect data for monitoring values according to § 63.8244(b)(2)(ii) through (v).

(2) You must maintain records of mercury emissions and 52-week average values, as required in § 63.8256(b)(3) and (4). If your final control device is not a nonregenerable carbon adsorber, you must maintain records according to § 63.8256(d).

(b) *Mercury thermal recovery unit vents.* (1) For each mercury thermal recovery unit vent, you must demonstrate continuous compliance with the applicable emission limit specified in § 63.8190(a)(3) by maintaining the outlet mercury hourly-average concentration no higher than the applicable limit. To determine the outlet mercury concentration, you must monitor according to paragraph (b)(1)(i) or (ii) of this section.

(i) *Continuous monitoring option.* You must collect mercury concentration data according to § 63.8244(a), representing at least 75 percent of the 15-minute periods in the operating day (with data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities not counting toward the 75 percent requirement).

(ii) *Periodic monitoring option.* You must conduct at least three test runs per week to collect mercury emissions samples according to § 63.8244(b)(1) and (2)(i) and, if your final control device is not a nonregenerable carbon adsorber, you must collect data for monitoring values according to § 63.8244(b)(2)(ii) through (v).

(2) You must maintain records of mercury emissions and daily average values as required in § 63.8256(b)(3). If your final control device is not a nonregenerable carbon adsorber, you must maintain records according to § 63.8256(d).

(c) You must demonstrate continuous compliance with the applicable work practice standards in § 63.8192 by maintaining records in accordance with § 63.8256(c).

§ 63.8248 What other requirements must I meet?

(a) *Deviations.* The instances specified in paragraphs (a)(1) through (4) of this section are deviations and must be reported according to the requirements in § 63.8254.

(1) You must report each instance in which you did not meet each emission limitation in § 63.8190 that applies to you. This includes periods of startup, shutdown, and malfunction.

(2) You must report each instance in which you did not meet each work practice standard in § 63.8192 that applies to you. This includes periods of startup, shutdown, and malfunction.

(3) You must report each instance in which the corrective actions taken according to § 63.8244(b)(2)(iv) did not result in average monitoring values being within range within 48 hours of the period that the monitoring value is out of range.

(4) You must report each instance in which the corrective action taken according to § 63.8244(b)(2)(v) did not result in the maximum hourly temperature being above the reference temperature during the first regeneration cycle following the period that the monitoring value was out of range.

(b) *Startups, shutdowns, and malfunctions.* During periods of startup, shutdown, and malfunction, you must operate in accordance with your startup, shutdown, and malfunction plan that satisfies the requirements in § 63.6(e) and as required in § 63.8226(b).

(1) Consistent with §§ 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you have an adequate startup, shutdown, or malfunction plan that satisfies the requirements of § 63.6(e), and you have complied with the startup, shutdown, and malfunction plan.

(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in § 63.6(e).

(3) By-passing the control device for maintenance activities is not considered a startup, shutdown, or malfunction event.

Notification, Reports, and Records

§ 63.8252 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e) and (f) and 63.9(b) through (h) that apply to you by the dates specified.

(b) As specified in § 63.9(b)(2), if you start up your affected source before December 19, 2003, you must submit your initial notification not later than April 19, 2004.

(c) As specified in § 63.9(b)(3), if you start up your new or reconstructed mercury recovery facility on or after December 19, 2003, you must submit your initial notification not later than 120 days after you become subject to this subpart.

(d) For each performance test that you are required to conduct for by-product hydrogen streams and end box ventilation system vents and for mercury thermal recovery unit vents, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required in § 7(b)(1).

(e) You must submit a Notification of Compliance Status according to paragraphs (e)(1) and (2) of this section.

(1) For each initial compliance demonstration that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th calendar day following the completion of the initial compliance demonstration. The Notification of Compliance Status must contain the items in paragraphs (e)(1)(i) through (iv) of this section:

(i) If you choose not to implement a cell room monitoring program according to § 63.8192(g), a certification that you are operating according to the applicable work practice standards in § 63.8192(a) through (d) and your floor-level mercury vapor measurement plan required by § 63.8192(d).

(ii) The washdown plan, and you must certify that you are operating according to the washdown plan specified in § 63.8192(f).

(iii) The mass of virgin mercury added to cells for the 5 years preceding the compliance date.

(iv) If you choose to implement a cell room monitoring program according to § 63.8192(g), your cell room monitoring plan.

(2) For each initial compliance demonstration that does include a performance test, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to § 63.10(d)(2). The Notification of Compliance Status must contain the information in § 63.9(h)(2)(ii)(A) through (G). The site-specific monitoring plan required in § 63.8242(a)(3) must also be submitted.

§ 63.8254 What reports must I submit and when?

(a) *Compliance report due dates.* You must submit a semiannual compliance report to your permitting authority according to the requirements in paragraphs (a)(1) through (4) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.8186 and ending on June 30 or December 31, whichever date comes first after the compliance date that is specified for your affected source in § 63.8186.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after your first compliance reporting period.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

(b) *Compliance report contents.* Each compliance report must contain the information in paragraphs (b)(1) through (3) of this section, and as applicable, paragraphs (b)(4) through (12) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown or malfunction during the reporting period and you took actions consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in § 63.10(d)(5)(i).

(5) If there were no deviations from the continuous compliance requirements in § 63.8246 that apply to you, a statement that there were no deviations from the emission limitations, work practice standards, and operation and maintenance standards during the reporting period.

(6) If there were no periods during which the mercury continuous emission monitor or CPMS (if applicable) were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during the which the mercury continuous emissions monitor or CPMS (if applicable) were out-of-control during the reporting period.

(7) For each deviation from the requirements for work practice standards in Tables 1 through 4 to this subpart that occurs at an affected source (including deviations where the response intervals were not adhered to as described in § 63.8192(b)), the compliance report must contain the information in paragraphs (b)(1) through (4) of this section and the information in paragraphs (b)(7)(i) and (ii) of this section. This includes periods of startup, shutdown, and malfunction.

(i) The total operating time of each affected source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(8) For each deviation from an emission limitation occurring at an affected source where you are using a mercury continuous emission monitor, according to the site-specific monitoring plan required in § 63.8242(a)(3), to comply with the emission limitation in this subpart, you must include the information in paragraphs (b)(1) through (4) of this section and the information in paragraphs (b)(8)(i) through (xii) of this section. This includes periods of startup, shutdown, and malfunction.

(i) The date and time that each malfunction started and stopped.

(ii) The date and time of each instance in which a continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time, and duration of each instance in which a continuous monitoring system was out-of-control, including the information in § 63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period including those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) An identification of each hazardous air pollutant that was monitored at the affected source.

(ix) A brief description of the process units.

(x) A brief description of the continuous monitoring system.

(xi) The date of the latest continuous monitoring system certification or audit.

(xii) A description of any changes in monitoring system, processes, or controls since the last reporting period.

(9) For each deviation from an operation and maintenance standard occurring at an affected source where you are using the periodic monitoring option specified in § 63.8240(b) and your final control device is not a nonregenerable carbon adsorber, the compliance report must include the information in paragraphs (b)(1) through (4) of this section and the information in paragraphs (b)(9)(i) through (x) of this section. This includes periods of startups, shutdowns and malfunctions.

(i) The total operating time of each affected source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, whether the deviation occurred during a period of startup, shutdown, or malfunction, or other period, and the corrective action taken.

(iii) The date and time of each instance in which a CPMS was inoperative, except for zero (low-level) and high-level checks.

(iv) The date, time, and duration of each instance in which a CPMS was out-of-control, including the information specified in § 63.8(c)(8).

(v) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period including those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) A brief description of the CPMS.

(ix) The date of the latest CPMS certification or audit.

(x) A description of any changes in monitoring system, processes, or controls since the last reporting period.

(10) The compliance report must contain the mass of virgin mercury added to cells for the reporting period.

(11) The compliance report must contain each instance in which corrective actions taken under § 63.8244(b)(2)(iv) did not result in average monitoring values being within range within 48 hours of the period that the monitoring value is out of range.

(12) The compliance report must contain each instance in which corrective action taken according to § 63.8244(b)(2)(v) did not result in the maximum hourly temperature being above the reference temperature during the first regeneration cycle following the period that the monitoring value was out of range.

(c) *Immediate startup, shutdown, and malfunction report.* If you took an action during a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with your startup, shutdown, and malfunction plan required in § 63.8226(b), and the source exceeded any applicable emission limitation in this subpart, you must submit an immediate startup, shutdown, and malfunction report according to the requirements in § 63.10(d)(5)(ii).

(d) *Title V monitoring report.* After your affected source has been issued a title V operating permit pursuant to 40 CFR part 70 or 40 CFR part 71, you must report all deviations from permit requirements and provide reports of any required monitoring in your semiannual monitoring report as required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a semiannual compliance report for an affected source as required by this subpart as part of the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the semiannual compliance report includes all information required by the 40 CFR part 70 or 40 CFR part 71 semiannual monitoring report for the deviations that are reported in the semiannual compliance report, submission of the semiannual compliance report satisfies your obligation to report the same deviation information in the semiannual monitoring report. However, in such situations, the semiannual monitoring report must cross-reference the semiannual compliance report, and submission of a semiannual compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an affected source to your permitting authority under 40 CFR part 70 or 40 CFR part 71.

§ 63.8256 What records must I keep?

(a) *General records.* You must keep the records in paragraphs (a)(1) and (2) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or Notification of Compliance Status that you submitted, according to the requirements in § 63.10(b)(2)(xiv).

(2) The records in § 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(b) Records associated with the by-product hydrogen stream and end box ventilation system vent emission limitations and the mercury thermal recovery unit vent emission limitations. You must keep the records in paragraphs (b)(1) through (5) of this section related to the emission limitations in § 63.8190(a)(2) through (3) and (b).

(1) Records of performance tests as required in § 63.10(b)(2)(viii).

(2) Records of the mercury emissions monitoring conducted during the performance tests.

(3) Records of the continuous or periodic mercury emissions monitoring data.

(4) Records of the 52-week rolling average mercury emissions.

(5) Records associated with your site-specific monitoring plan required in § 63.8242(a)(3) (*i.e.,* results of inspections, calibrations, and validation checks of each mercury concentration continuous monitoring system (CMS)).

(6) Records of chlorine production on a weekly basis.

(c) Records associated with the work practice standards.

(1) If you choose not to institute a cell room monitoring program according to § 63.8192(g) of this subpart, you must keep the records specified in paragraphs (c)(1)(i) through (v) of this section.

(i) Records specified in Table 9 to this subpart related to the work practice standards in Tables 1 through 4 of this subpart.

(ii) Your current floor-level mercury vapor measurement plan.

(iii) Records of the average value calculated from at least three measurements taken according to your floor-level mercury vapor measurement plan.

(iv) Records indicated in § 63.8192(d)(4)(i) for maintenance activities that cause the floor-level mercury concentration to exceed the action level.

(v) Records of all inspections and corrective actions taken in response to a non-maintenance related situation in which the mercury vapor concentration exceeds the floor-level mercury concentration action level.

(2) You must maintain a copy of your current washdown plan and records of when each washdown occurs.

(3) You must maintain records of the mass of virgin mercury added to cells for each reporting period.

(4) If you choose to institute a cell room monitoring program according to § 63.8192(g) of this subpart, you must keep your current cell room monitoring plan and the records specified in paragraphs (c)(4)(i) through (v) of this section.

(i) Records of the monitoring conducted in accordance with § 63.8192(g)(2)(i) to establish your action level, and records demonstrating the development of this action level.

(ii) Records of the cell room mercury concentration monitoring data collected.

(iii) Instances when the action level is exceeded.

(iv) Records specified in § 63.8192(g)(4)(i) for maintenance activities that cause the mercury vapor concentration to exceed the action level.

(v) Records of all inspections and corrective actions taken in response to a non-maintenance related situation in which the mercury vapor concentration exceeds the action level.

(d) Records associated with the periodic monitoring option if your final control device is not a nonregenerable carbon adsorber. You must keep the records in paragraph (d)(1) through (3) of this section.

(1) Records of the CPMS data collected during the performance test as specified in § 63.8232(f)(1).

(2) Records documenting the development of the maximum monitoring value or minimum monitoring value, as appropriate, according to § 63.8232(f)(2).

(3) Records of hourly average values of applicable parameters monitored as specified in § 63.8244(b)(2)(ii) or (iii).

§ 63.8258 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious inspection and review, according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You can keep the records offsite for the remaining 3 years.

Other Requirements and Information

§ 63.8262 What parts of the General Provisions apply to me?

Table 10 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.13 apply to you.

§ 63.8264 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the United States Environmental Protection Agency (U.S. EPA), or a delegated authority such as your State, local, or tribal agency. If the EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

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

(c) The authorities in paragraphs (c)(1) through (4) of this section will not be delegated to State, local, or tribal agencies.

(1) Approval of alternatives under § 63.6(g) to the non-opacity emission limitations in § 63.8190 and work practice standards in § 63.8192.

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

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

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

§ 63.8266 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in § 63.2, and in this section as follows:

Aqueous liquid means a liquid mixture in which water is the predominant component.

Brine means an aqueous solution of alkali metal chloride, as sodium chloride salt solution or potassium chloride salt solution, that is used in the electrolyzer as a raw material.

By-product hydrogen stream means the hydrogen gas from each decomposer that passes through the hydrogen system and is burned as fuel, transferred to another process as raw material, or discharged directly to the atmosphere.

Caustic means an aqueous solution of alkali metal hydroxide, as sodium hydroxide or potassium hydroxide, that is produced in the decomposer.

Caustic basket means a fixture adjacent to the decomposer that contains a serrated funnel over which the caustic from the decomposer passes, breaking into droplets such that electric current is interrupted.

Caustic system means all vessels, piping, and equipment that convey caustic and remove mercury from the caustic stream. The caustic system begins at the decomposer and ends after the primary filters.

Cell room means a building or other structure in which one or more mercury cells are located.

Continuous parameter monitoring system, or CPMS, means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart, used to sample, condition (if applicable), analyze, and provide a record of process of control system parameters.

Control device means a piece of equipment (such as condensers, coolers, chillers, heat exchangers, mist eliminators, absorption units, and adsorption units) that removes mercury from gaseous streams.

Decomposer means the component of a mercury cell in which mercury amalgam and water react in bed of graphite packing (within a cylindrical vessel), producing caustic and hydrogen gas and returning mercury to its elemental form for re-use in the process.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limitation (including any operating limit) or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the title V operating permit for any affected source required to obtain such a permit;

(3) Fails to meet any emission limitation (including any operating limit) or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is allowed by this subpart; or

(4) Fails to take corrective actions within 48 hours that result in parameter monitoring values being within range.

Electrolyzer means the main component of the mercury cell that consists of an elongated, shallow steel trough that holds a layer of mercury as a flowing cathode. The electrolyzer is enclosed by side panels and a top that suspends metal anodes. In the electrolyzer, brine is fed between a flowing mercury cathode and metal anodes in the presence of electricity to produce chlorine gas and an alkali metal-mercury amalgam (mercury amalgam).

Emission limitation means any emission limit or operating limit.

End box means a component of a mercury cell for transferring materials between the electrolyzer and the decomposer. The inlet end box collects and combines raw materials at the inlet end of the cell, and the outlet end box separates and directs various materials either into the decomposer or out of the cell.

End box ventilation system means all vessels, piping, and equipment that evacuate the head space of each mercury cell end box (and possibly other vessels and equipment) to the atmosphere. The end box ventilation system begins at the end box (and other vessel or equipment which is being evacuated) and terminates at the end box ventilation system vent. The end box ventilation system includes all control devices.

End box ventilation system vent means the discharge point of the end box ventilation system to the atmosphere after all control devices.

Hydrogen leak means hydrogen gas (containing mercury vapor) that is escaping from the decomposer or hydrogen system.

Hydrogen system means all vessels, piping, and equipment that convey a by-product hydrogen stream. The hydrogen system begins at the decomposer and ends at the point just downstream of the last control device. The hydrogen system includes all control devices.

In liquid mercury service means containing or coming in contact with liquid mercury.

Liquid mercury accumulation means one or more liquid mercury droplets, or a pool of liquid mercury, present on the floor or other surface exposed to the atmosphere.

Liquid mercury leak means the liquid mercury that is dripping or otherwise escaping from process equipment.

Liquid mercury spill means a liquid mercury accumulation resulting from a liquid mercury that leaked from process equipment or that dripped during maintenance or handling.

Mercury cell means a device consisting of an electrolyzer and decomposer, with one or more end boxes, a mercury pump, and other components linking the electrolyzer and decomposer.

Mercury cell amalgam seal pot means a compartment through which mercury amalgam passes from an outlet end box to a decomposer.

Mercury cell chlor-alkali plant means all contiguous or adjoining property that is under common control, where mercury cells are used to manufacture product chlorine, product caustic, and by-product hydrogen and where mercury may be recovered from wastes.

Mercury cell chlor-alkali production facility means an affected source consisting of all cell rooms and ancillary operations used in the manufacture of product chlorine, product caustic, and by-product hydrogen at a mercury cell chlor-alkali plant.

Mercury concentration CMS, or mercury concentration continuous monitoring system, means a CMS, as defined in § 63.2, that continuously measures the concentration of mercury.

Mercury-containing wastes means waste materials containing mercury, which are typically classified under Resource Conservation and Recovery Act (RCRA) solid waste designations. K071 wastes are sludges from the brine system. K106 are wastewater treatment sludges. D009 wastes are non-specific mercury-containing wastes, further classified as either debris or nondebris (*i.e.*, cell room sludges and carbon from decomposes).

Mercury pump means a component of a mercury cell for conveying elemental mercury re-created in the decomposer to the beginning of the mercury cell. A mercury pump is typically found either as an in-line mercury pump (near a mercury suction pot or mercury seal pot) or submerged mercury pump (within a mercury pump tank or mercury pump seal).

Mercury recovery facility means an affected source consisting of all processes and associated operations needed for mercury recovery from wastes at a mercury cell chlor-alkali plant.

Mercury thermal recovery unit means the retort(s) where mercury-containing wastes are heated to volatilize mercury and the mercury recovery/control system (control devices and other equipment) where the retort off-gas is cooled, causing mercury to condense and liquid mercury to be recovered.

Mercury thermal recovery unit vent means the discharge point of the mercury thermal recovery unit to the atmosphere after all recovery/control devices. This term encompasses both oven type vents and non-oven type vents.

Mercury vacuum cleaner means a cleanup device used to draw a liquid mercury spill or accumulation (via suction pressure) into a closed compartment.

Non-oven type mercury thermal recovery unit vent means the discharge point to the atmosphere after all recovery/control devices of a mercury thermal recovery unit in which the retort is either a rotary kiln or single hearth retort.

Open-top container means any container that does not have a tight-fitting cover that keeps its contents from being exposed to the atmosphere.

Oven type mercury thermal recovery unit vent means the discharge point to the atmosphere after all recovery/control devices of a mercury thermal recovery unit in which each retort is a batch oven retort.

Responsible official means responsible official as defined in 40 CFR 70.2.

Retort means a furnace where mercury-containing wastes are heated to drive mercury into the gas phase. The types of retorts used as part of mercury thermal recovery units at mercury cell chlor-alkali plants include batch oven retorts, rotary kilns, and single hearth retorts.

Spalling means fragmentation by chipping.

Sump means a large reservoir or pit for wastewaters (primarily washdown waters).

Trench means a narrow channel or depression built into the length of a cell room floor that leads washdown materials to a drain.

Vent hose means a connection for transporting gases from the mercury cell.

Virgin mercury means mercury that has not been processed in an onsite mercury thermal recovery unit or otherwise recovered from mercury-containing wastes onsite.

Washdown means the act of rinsing a floor or surface with a stream of aqueous liquid to cleanse it of a liquid mercury spill or accumulation, generally by driving it into a trench.

Week means any consecutive seven-day period.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

Tables to Subpart IIIII of Part 63

TABLE 1 TO SUBPART IIIII OF PART 63.—WORK PRACTICE STANDARDS—DESIGN, OPERATION, AND MAINTENANCE REQUIREMENTS

[As stated in §63.8192, you must meet the work practice standards in the following table]

For * * *	You must * * *
1. Cell rooms	a. For new or modified cell rooms, construct each cell room interior using materials that are resistant to absorption of mercury, resistant to corrosion, facilitate the detection of liquid mercury spills or accumulations, and are easy to clean. b. Limit access around and beneath mercury cells in each cell room to prevent liquid mercury from being tracked into other areas. c. Provide adequate lighting in each cell room to facilitate the detection of liquid mercury spills or accumulations. d. Minimize the number of items stored around and beneath cells in each cell room.
2. Mercury cells and electrolyzers	a. Operate and maintain each electrolyzer, decomposer, end box, and mercury pump to minimize leakage of mercury. b. Prior to opening an electrolyzer for maintenance, do the following: (1) Complete work that can be done before opening the electrolyzer in order to minimize the time required to complete maintenance when the electrolyzer is open; (2) fill the electrolyzer with an aqueous liquid, when possible; (3) allow the electrolyzer to cool before opening; and (4) schedule and staff maintenance of the electrolyzer to minimize the time the electrolyzer is open. c. When the electrolyzer top is raised and before moving the top and anodes, thoroughly flush all visible mercury from the top and the anodes with an aqueous liquid, when possible. d. While an electrolyzer is open, keep the bottom covered with an aqueous liquid or maintain a continuous flow of aqueous liquid, when possible. e. During an electrolyzer side panel change, take measures to ensure an aqueous liquid covers or flows over the bottom, when possible. f. Each time an electrolyzer is opened, inspect and replace components, as appropriate. g. If you step into an electrolyzer bottom, either remove all visible mercury from your footwear or replace them immediately after stepping out of the electrolyzer. h. If an electrolyzer is disassembled for overhaul maintenance or for any other reason, chemically clean the bed plate or thoroughly flush it with an aqueous liquid. i. Before transporting each electrolyzer part to another work area, remove all visible mercury from the part or contain the part to prevent mercury from dripping during transport. j. After completing maintenance on an electrolyzer, check any mercury piping flanges that were opened for liquid mercury leaks. k. If a liquid mercury spill occurs during any maintenance activity on an electrolyzer, clean it up in accordance with the requirements in Table 3 to this subpart.

TABLE 1 TO SUBPART IIIII OF PART 63.—WORK PRACTICE STANDARDS—DESIGN, OPERATION, AND MAINTENANCE REQUIREMENTS—Continued

[As stated in § 63.8192, you must meet the work practice standards in the following table]

For * * *	You must * * *
3. Vessels in liquid mercury service	If you replace a vessel containing mercury that is intended to trap and collect mercury after December 19, 2003, replace it with a vessel that has a cone shaped bottom with a drain valve or other design that readily facilitates mercury collection.
4. Piping and process lines in liquid mercury service.	a. To prevent mercury buildup after December 19, 2003, equip each new process line and piping system with smooth interiors and adequate low point drains or mercury knock-out pots to avoid liquid mercury buildup within the pipe and to facilitate mercury collection and recovery.
5. Cell room floors	a. Maintain a coating on cell room floors that is resistant to absorption of mercury and that facilitates the detection of liquid mercury spills or accumulations. b. Maintain cell room floors such that they are smooth and free of cracking and spalling. c. Maintain the cell room floor to prevent mercury accumulation in the corners. d. Maintain a layer of aqueous liquid on liquid mercury contained in trenches or drains and replenish the aqueous layer at least once per day. e. Keep the cell room floor clean and free of debris. f. If you step into a liquid mercury spill or accumulation, either remove all visible mercury from your footwear or replace your footwear immediately.
6. End boxes	a. Either equip each end box with a fixed cover that is leak tight, or route the end box head space to an end box ventilation system. b. For each end box ventilation system: maintain a flowof aqueous liquid over the liquid mercury in the end box and maintain the temperature of the aqueous liquid below its boiling point, maintain a negative pressure in the end box ventilation system, and maintain the end box ventilation system in good condition. c. Maintain each end box cover in good condition and keep the end box closed when the cell is in service and when liquid mercury is flowing down the cell, except when operation or maintenance activities require short-term access. d. Keep all bolts and C-clamps used to hold the covers in place when the cell is in service and when liquid mercury is flowing down the cell. e. Maintain each access port stopper in an end box cover in good sealing condition and keep each end box access port closed when the cell is in service and when liquid mercury is flowing down the cell.
7. Decomposers	a. Maintain each decomposer cover in good condition and keep each decomposer closed and sealed, except when maintenance activities require the cover to be removed. b. Maintain connections between the decomposer and the corresponding cell components, hydrogen system piping, and caustic system piping in good condition and keep the connections closed/tight, except when maintenance activities require opening/loosening these connections. c. Keep each mercury cell amalgam seal pot closed and sealed, except when operation or maintenance activities require short-term access. d. Prior to opening a decomposer, do the following: fill the decomposer with an aqueous liquid or drain the decomposer liquid mercury into a container that meets requirements in Table 1, Item 9 or 10, allow the decomposer to cool before opening, and complete work that can be done before opening the decomposer. e. Take precautions to avoid mercury spills when changing graphite grids or balls in horizontal decomposers or graphite packing in vertical decomposers. If a spill occurs, you must clean it up in accordance with the requirements in Table 3 to this subpart. f. After each maintenance activity, use an appropriate technique (Table 6 to this subpart) to check for hydrogen leaks. g. Before transporting any internal part from the decomposer (such as the graphite basket) to another work area, remove all visible mercury from the part or contain the part to prevent mercury from dripping during transport. h. Store carbon from decomposers in accordance with the requirements in 40 CFR part 265, subparts I and CC, until the carbon is treated or is disposed.
8. Submerged mercury pumps	a. Provide a vapor outlet connection from each submerged pump to an end box ventilation system. The connection must be maintained under negative pressure. b. Keep each mercury pump tank closed, except when maintenance or operation activities require the cover to be removed. c. Maintain a flow of aqueous liquid over the liquid mercury in each mercury pump tank and maintain the aqueous liquid at a temperature below its boiling point.
9. Open-top containers holding liquid mercury.	Maintain a layer of aqueous liquid over liquid mercury in each open-top container. Replenish the aqueous layer at least once per day and, when necessitated by operating procedures or observation, collect the liquid mercury from the container in accordance with the requirements in Table 4 to this subpart.
10. Closed containers used to store liquid mercury.	a. Store liquid mercury in containers with tight fitting covers. b. Maintain the seals on the covers in good condition. c. Keep each container securely closed when mercury is not being added to, or removed from, the container.
11. Caustic systems	a. Maintain the seal between each caustic basket cover and caustic basket by using gaskets and other appropriate material. b. Do not allow solids and liquids collected from back-flushing primary caustic filters to contact floors or run into open trenches. c. Collect solids and liquids from back-flushing each primary caustic filter and collect these mercury-containing wastes in process vessels or in accordance with the requirements in 40 CFR part 265, subparts I and CC.

TABLE 1 TO SUBPART IIIII OF PART 63.—WORK PRACTICE STANDARDS—DESIGN, OPERATION, AND MAINTENANCE REQUIREMENTS—Continued

[As stated in § 63.8192, you must meet the work practice standards in the following table]

For * * *	You must * * *
	d. Keep each caustic basket closed and sealed, except when operation or maintenance activities require short term access.
12. Hydrogen systems	a. Collect drips from each hydrogen seal pot and compressor seal in containers meeting the requirements in this table for open containers. These drips should not be allowed to run on the floor or in open trenches. b. Minimize purging of hydrogen from a decomposer into the cell room by either sweeping the decomposer with an inert gas or by routing the hydrogen to the hydrogen system. c. Maintain hydrogen piping gaskets in good condition. d. After any maintenance activities, use an appropriatetechnique (Table 6 to this subpart) to check all hydrogen piping flanges that were opened for hydrogen leaks.

TABLE 2 TO SUBPART IIIII OF PART 63.—WORK PRACTICE STANDARDS—REQUIRED INSPECTIONS

[As stated in § 63.8192, you must meet the work practice standards in the following table]

You must inspect * . *	At least once each * * *	And if you find * * *	You must * * *
1. Each vent hose on each mercury cell	Half day	A leaking vent hose	Take action immediately to correct the leak.
2. Each open-top container holding liquid mercury.	Half day	Liquid mercury that is not covered by an aqueous liquid.	Take action immediately to cover the liquid mercury with an aqueous liquid.
3. Each end box	Half day	a. An end box cover not securely in place.	Take action immediately to put the end box cover securely in place.
		b. An end box stopper not securely in place.	Take action immediately to put the end box stopper securely in place.
		c. Liquid mercury in an end box that is not covered by an aqueous liquid at a temperature below boiling.	Take action immediately to cover the liquid mercury with an aqueous liquid.
4. Each mercury amalgam seal pot	Half day	A seal pot cover that is not securely in place.	Take action immediately to put the seal pot cover securely in place.
5. Each mercury seal pot	Half day	A mercury seal pot stopper not securely in place.	Take action immediately to put the mercury seal pot stopper securely in place.
6. Cell room floors	Month	Cracks, spalling, or other deficiencies that could cause liquid mercury to become trapped.	Repair the crack, spalling, or other deficiency within 1 month from the time you identify the deficiency.
7. Pillars and beams	6 months	Cracks, spalling, or other deficiencies that could cause liquid mercury to become trapped.	Repair the crack, spalling, or other deficiency within 1 month from the time you identify the deficiency.
8. Each caustic basket	Half day	A caustic basket cover that is not securely in place.	Take action immediately to put the caustic basket cover securely in place.
9. All equipment and piping in the caustic system.	Day	Equipment that is leaking caustic	Initiate repair of the leaking equipment within 72 hours from the time that you identify the caustic leak.
10. All floors and other surfaces where liquid mercury could accumulate in cell rooms and other production facilities and in mercury recovery facilities.	Half day	A liquid mercury spill or accumulation	Take the required action specified in Table 3 to this subpart.
11. Each electrolyzer bottom, electrolyzer side panel, end box, mercury amalgam seal pot, decomposer, mercury pump, and hydrogen cooler, and all other vessels, piping, and equipment in liquid mercury service in the cell room.	Day	Equipment that is leaking liquid mercury	Take the required action specified in Table 3 to this subpart.
12. Each decomposer and all hydrogen piping up to the hydrogen header.	Half day	Equipment that is leaking hydrogen and/or mercury vapor.	Take the required action specified in Table 3 to this subpart.
13. All equipment in the hydrogen system from the start of the header to the last control device.	3 months	Equipment that is leaking hydrogen and/or mercury vapor.	Take the required action specified in Table 3 to this subpart.

Table 3 to Subpart IIIII of Part 63.—Work Practice Standards—Required Actions for Liquid Mercury Spills and Accumulations and Hydrogen and Mercury Vapor Leaks

[As stated in § 63.8192, you must meet the work practice standards in the following table]

During a required inspection or at any other time, If you find * * *	You must * * *
1. A liquid mercury spill or accumulation	a. Initiate clean up of the liquid mercury spill or accumulation as soon as possible, but no later than 1 hour from the time you detect it.
	b. Clean up liquid mercury using a mercury vacuum cleaner or by using an alternative method. If you use an alternative method to clean up liquid mercury, you must submit a description of the method to the Administrator in your Notification of Compliance Status report.
	c. If you use a mercury vacuum cleaner, the vacuum cleaner must be designed to prevent generation of airborne mercury; you must cap the ends of hoses after each use; and after vacuuming, you must wash down the area.
	d. Inspect all equipment in liquid mercury service in the surrounding area to identify the source of the liquid mercury within 1 hour from the time you detect the liquid mercury spill or accumulation.
	e. If you identify leaking equipment as the source of the spill or accumulation, contain the dripping mercury, stop the leak, and repair the leaking equipment as specified below.
	f. If you cannot identify the source of the liquid mercury spill or accumulation, re-inspect the area within 6 hours of the time you detected the liquid mercury spill or accumulation, or within 6 hours of the last inspection of the area.
2. Equipment that is leaking liquid mercury	a. Contain the liquid mercury dripping from the leaking equipment by placing a container under the leak within 30 minutes from the time you identify the liquid mercury leak.
	b. The container must meet the requirement for open-top containers in Table 1 to this subpart.
	c. Make a first attempt at stopping the leak within 1 hour from the time you identify the liquid mercury leak.
	d. Stop the leak and repair the leaking equipment within 4 hours from the time you identify the liquid mercury leak.
	e. You can delay repair of equipment leaking liquid mercury if you either isolate the leaking equipment from the process so that it does not remain in mercury service; or determine that you cannot repair the leaking equipment without taking the cell off line, provided that you contain the dripping mercury at all times as described above, and take the cell off line as soon as practicable, but no later than 48 hours from the time you identify the leaking equipment. You cannot place the cell back into service until the leaking equipment is repaired.
3. A decomposer or hydrogen system piping up to the hydrogen header that is leaking hydrogen and/or mercury vapor.	a. Make a first attempt at stopping the leak within 1 hour from the time you identify the hydrogen and/or mercury vapor leak.
	b. Stop the leak and repair the leaking equipment within 4 hours from the time you identify the hydrogen and/or mercury vapor leak.
	c. You can delay repair of a equipment leaking hydrogen and/or mercury vapor if you isolate the leaking equipment or take the cell off line until you repair the leaking equipment.
4. Equipment in the hydrogen system, from the start of the hydrogen header to the last control device, that is leaking hydrogen and/or mercury vapor.	a. Make a first attempt at stopping the leak within 4 hours from the time you identify the hydrogen and/or mercury vapor leak.
	b. Stop the leak and repair the header within 24 hours from the time you identify the hydrogen and/or mercury vapor leak.
	c. You can delay repair of equipment leaking hydrogen and/or mercury vapor if you isolate the leaking equipment.

Table 4 to Subpart IIIII of Part 63.—Work Practice Standards—Requirements for Mercury Liquid Collection

[As stated in § 63.8192, you must meet the work practice standards in the following table]

You must collect liquid mercury from * * *	At the following intervals	When collecting the mercury, you must meet these requirements		
1. Open-top containers	a. At least once each 72 hours.	i. If you spill liquid mercury during collection or transport, you must take the action specified in Table 3 to this subpart for liquid mercury spills and accumulations.	ii. From the time that you collect liquid mercury into a temporary container until the time that you store the liquid mercury, you must keep it covered by an aqueous liquid.	iii. Within 4 hours from the time you‘ collect the liquid mercury, you must transfer it from each temporary container to a storage container that meets the specifications in Table 1 to this subpart.
2. Vessels, low point drains, mercury knock-out pots, and other closed mercury collection points.	a. At least once each week.	See 1.a.i through iii above.		

TABLE 4 TO SUBPART IIIII OF PART 63.—WORK PRACTICE STANDARDS—REQUIREMENTS FOR MERCURY LIQUID COLLECTION—Continued

[As stated in § 63.8192, you must meet the work practice standards in the following table]

3. All other equipment	a. Whenever maintenance activities require the opening of the equipment.	See 1.a.i. through iii above.

TABLE 5 TO SUBPART IIIII.—REQUIRED ELEMENTS OF FLOOR-LEVEL MERCURY VAPOR MEASUREMENT AND CELL ROOM MONITORING PLANS

[Your Floor-Level Mercury Vapor Measurement Plan required by § 63.8192(d) and Cell Room Monitoring Plan required by § 63.8192(g) must contain the elements listed in the following table]

You must specify in your plan * * *	Additional requirements
Floor-Level Mercury Vapor Measurement Plan	
1. Locations in the cell room where you will measure the level of mercury vapor.	The locations must be representative of the entire cell room floor area. At a minimum you must measure the level of mercury vapor above mercury-containing cell room equipment, as well as areas around the cells, decomposes, or other mercury-containing equipment.
2. Equipment or sampling and analytical methods that you will use to measure the level of mercury vapor.	If an instrument or other equipment is used, the plan must include manufacturer specifications and calibration procedures. The plan must also include a description of how you will ensure that the instrument will be calibrated and maintained according to manufacturer specifications.
3. Measurement frequency	Measurements must take place at least once each half day.
4. Number of measurements	At least three readings must be taken at each sample location and the average of these readings must be recorded.
5. A floor-level mercury concentration action level	The action level may not be higher than 0.05 mg/m^3.
Cell Room Monitoring Plan	
1. Details of your mercury monitoring system.	
2. How representative sampling will be conducted	Include some pre-plan measurements to demonstrate the profile of mercury concentration in the cell room and how the selected sampling locations ensure conducted representativeness.
3. Quality assurance/quality control procedures for your mercury monitoring system.	Include a description of how you will keep records or other means to demonstrate that the system is operating properly.
4. Your action level	Include the background data used to establish your level.

TABLE 6 TO SUBPART IIIII OF PART 63.—EXAMPLES OF TECHNIQUES FOR EQUIPMENT PROBLEM IDENTIFICATION, LEAK DETECTION AND MERCURY VAPOR MEASUREMENTS

[As stated in Tables 1 and 2 of Subpart IIIII, examples of techniques for equipment problem identification, leak detection and mercury vapor measurements can be found in the following table]

To detect * * *	You could use * * *	Principle of detection * * *
1. Leaking vent hoses; liquid mercury that is not covered by an aqueous liquid in open-top containers or end boxes; end box covers or stoppers, amalgam seal pot stoppers, or caustic basket covers not securely in place; cracks or spalling in cell room floors, pillars, or beams; caustic leaks; liquid mercury accumulations or spills; and equipment that is leaking liquid mercury.	Visual inspections	
2. Equipment that is leaking hydrogen and/or mercury vapor during inspections required by Table 2 to this subpart.	a. Auditory and visual inspections	
	b. Portable mercury vapor analyzer—ultraviolet light absorption detector.	A sample of gas is drawn through a detection cell where ultraviolet light at 253.7 nanometers (nm) is directed perpendicularly through the sample toward a photodetector. Elemental mercury absorbs the incident light in proportion to its concentration in the air stream.
	c. Portable mercury vapor analyzer—gold film amalgamation detector.	A sample of gas is drawn through a detection cell containing a gold film detector. Elemental mercury amalgamates with the gold film, changing the resistance of the detector in proportion to the mercury concentration in the air sample.

TABLE 6 TO SUBPART IIIII OF PART 63.—EXAMPLES OF TECHNIQUES FOR EQUIPMENT PROBLEM IDENTIFICATION, LEAK DETECTION AND MERCURY VAPOR MEASUREMENTS—Continued

[As stated in Tables 1 and 2 of Subpart IIIII, examples of techniques for equipment problem identification, leak detection and mercury vapor measurements can be found in the following table]

To detect * * *	You could use * * *	Principle of detection * * *
	d. Portable short-wave ultraviolet light, fluorescent background—visual indication.	Ultraviolet light is directed toward a fluorescent background positioned behind a suspected source of mercury emissions. Elemental mercury vapor absorbs the ultraviolet light, projecting a dark shadow image on the fluorescent background.
	e. Portable combustible gas meter.	
3. Level of mercury vapor in the cell room and other areas.	a. Portable mercury vapor analyzer—ultraviolet light absorption detector.	See Item 2.b.
	b. Portable mercury vapor analyzer—gold film amalgamation detector.	See Item 2.c.
	c. Permanganate impingement	A known volume of gas sample is absorbed in potassium permanganate solution. Elemental mercury in the solution is determined using a cold vapor adsorption analyzer, and the concentration of mercury in the gas sample is calculated.

TABLE 7 TO SUBPART IIIII OF PART 63.—REQUIRED ELEMENTS OF WASHDOWN PLANS

[As stated in § 63.8192, your written washdown plan must address the elements contained in the following table]

For each of the following areas * * *	You must establish the following as part of your plan * * *
1. Center aisles of cell rooms	A description of the manner of washdown of the area, and the washdown frequency for the area.
2. Electrolyzers	
3. End boxes and areas under end boxes	
4. Decomposers and areas under decomposers	
5. Caustic baskets and areas around caustic baskets	
6. Hydrogen system piping	
7. Basement floor of cell rooms	
8. Tanks	
9. Pillars and beams in cell rooms	
10. Mercury cell repair areas	
11. Maintenance shop areas	
12. Work tables	
13. Mercury thermal recovery units	
14. Storage areas for mercury-containing wastes	

TABLE 8 TO SUBPART IIIII OF PART 63.—REQUIREMENTS FOR CELL ROOM MONITORING PROGRAM

[As stated in § 63.8192(g)(1), your mercury monitoring system must meet the requirements contained in the following table]

If you utilize an * * *	Your * * *	Must * * *
1. Extractive cold vapor spectroscopy system ..	a. Mercury vapor analyzer	Be capable of continuously monitoring the elemental mercury concentration with a detection level at least two times lower than the baseline mercury concentration in the cell room.
	b. Sampling system	Obtain measurements at three or more locations along the center aisle of the cell room at a height sufficient to ensure that sample is representative of the entire cell room. One sampling location must be above the midpoint of the center aisle, and the other two an equidistance between the midpoint and the end of the cells.
2. Open path differential optical absorption spectroscopy system.	a. Mercury vapor analyzer	Be capable of continuously monitoring the elemental mercury concentration with a detection level at least two times lower than the baseline mercury concentration in the cell room.
	b. Path	Be directed along the center aisle at a height sufficient to ensure that the sample is representative of the entire cell room.

TABLE 9 TO SUBPART IIIII OF PART 63.—REQUIRED RECORDS FOR WORK PRACTICE STANDARDS

[As stated in § 63.8256(c), you must keep the records (related to the work practice standards) specified in the following table]

For each * * *	You must record the following information * * *
1. Inspection required by Table 2 to this subpart	Date and time the inspection was conducted.
2. Situation found during an inspection required by Table 2 to this subpart: leaking vent hose; open-top container where liquid mercury is not covered by an aqueous liquid; end box cover that is not securely in place; end box stopper that is not securely in place; end box where liquid mercury is not covered by an aqueous liquid at a temperature below boiling; seal pot cover that is not securely in place; open or mercury seal pot stopper that is not securely in place; crack, spalling, or other deficiency in a cell room floor, pillar, or beam that could cause liquid mercury to become trapped; or caustic basket that is not securely in place.	a. Description of the condition. b. Location of the condition. c. Date and time you identify the condition. d. Description of the corrective action taken. e. Date and time you successfully complete the corrective action.
3. Caustic leak during an inspection required by Table 2 to this subpart	a. Location of the leak. b. Date and time you identify the leak. c. Date and time you successfully stop the leak and repair the leaking equipment.
4. Liquid mercury spill or accumulation identified during an inspection required by Table 2 to this subpart or at any other time.	a. Location of the liquid mercury spill or accumulation. b. Estimate of the weight of liquid mercury. c. Date and time you detect the liquid mercury spill or accumulation. d. Method you use to clean up the liquid mercury spill or accumulation. e. Date and time when you clean up the liquid mercury spill or accumulation. f. Source of the liquid mercury spill or accumulation. g. If the source of the liquid mercury spill or accumulation is not identified, the time when you reinspect the area.
5. Liquid mercury leak or hydrogen leak identified during an inspection required by Table 2 to this subpart or at any other time.	a. Location of the leak. b. Date and time you identify the leak. c. If the leak is a liquid mercury leak, the date and time that you successfully contain the dripping liquid mercury. d. Date and time you first attempt to stop the leak. e. Date and time you successfully stop the leak and repair the leaking equipment. f. If you take a cell off line or isolate the leaking equipment, the date and time you take the cell off line or isolate the leaking equipment, and the date and time you put the cell or isolated equipment back into service.
6. Occasion for which it is not possible to perform the design, operation and maintenance procedures required by Item 2 of Table 1 to this subpart.	a. Reason for not being able to perform each procedure determined to be not possible. b. Actions taken to reduce or prevent mercury emissions, in lieu of the requirements in Table 1 to this subpart.

TABLE 10 TO SUBPART IIIII OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART IIIII

[As stated in § 63.8262, you must comply with the applicable General Provisions requirements according to the following table]

Citation	Subject	Applies to Subpart IIIII	Explanation
§ 63.1	Applicability	Yes.	
§ 63.2	Definitions	Yes.	
§ 63.3	Units and Abbreviations	Yes.	
§ 63.4	Prohibited Activities	Yes.	
§ 63.5	Construction/Reconstruction	Yes.	
§ 63.6(a)–(g), (i), (j)	Compliance with Standards and Maintenance Requirements.	Yes.	
§ 63.6(h)	Compliance with Opacity and Visible Emission Standards.	No	Subpart IIIII does not have opacity and visible emission standards.
§ 63.7(a)(1), (b)–(h)	Performance Testing Requirements.	Yes	Subpart IIIII specifies additional requirements related to site-specific test plans and the conduct of performance tests.
§ 63.7(a)(2)	Applicability and Performance Test Dates.	No	Subpart IIIII requires the performance test to be performed on the compliance date.
§ 63.8(a)(1), (a)(3); (b); (c)(1)–(4), (6)–(8); (d); (e); and (f)(1)–(5).	Monitoring Requirements	Yes.	
§ 63.8(a)(2)	Continuous Monitoring System (CMS) Requirements.	No	Subpart IIIII requires a site-specific monitoring plan in lieu of a promulgated performance specification for a mercury concentration CMS.

TABLE 10 TO SUBPART IIIII OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART IIIII—Continued

[As stated in § 63.8262, you must comply with the applicable General Provisions requirements according to the following table]

Citation	Subject	Applies to Subpart IIIII	Explanation
§ 63.8(a)(4)	Additional Monitoring Requirements for Control Devices in § 63.11.	No	Subpart IIIII does not require flares.
§ 63.8(c)(5)	COMS Minimum Procedures	No	Subpart IIIII does not have opacity and visible emission standards.
§ 63.8(f)(6)	Alternative to Relative Accuracy Test.	No	Subpart IIIII does not require CEMS.
§ 63.8(g)	Data Reduction	No	Subpart IIIII specifies mercury concentration CMS data reduction requirements.
§ 63.9(a)–(e), (g)–(j)	Notification Requirements	Yes.	
§ 63.9(f)	Notification of VE/Opacity Test	No	Subpart IIIII does not have opacity and visible emission standards.
§ 63.10(a); (b)(1); (b)(2)(i)–(xii), (xiv); (b)(3); (c);(d)(1)–(2), (4)–(5); (e); (f).	Recordkeeping/Reporting	Yes.	
§ 63.10(b)(2)(xiii)	CMS Records for RATA Alternative.	No	Subpart IIIII does not require CEMS.
§ 63.10(d)(3)	Reporting Opacity or VE Observations.	No	Subpart IIIII does not have opacity and visible emission standards.
§ 63.11	Flares	No	Subpart IIIII does not require flares.
§ 63.12	Delegation	Yes.	
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by Reference	Yes.	
§ 63.15	Availability of Information	Yes.	

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