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Air

# NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) FOR PRIMARY ALUMINUM REDUCTION PLANTS - BACKGROUND INFORMATION FOR PROMULGATED STANDARDS, SUMMARY OF PUBLIC COMMENTS AND RESPONSES

# National Emission Standards For Hazardous Air Pollutants (NESHAP) for Primary Aluminum Reduction Plants - Background Information for Promulgated Standards, Summary of Public Comments and Responses

Emission Standards Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

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U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

Background Information
and Final
Environmental Impact Statement
for Hazardous Air Pollutant Emissions
From Primary Aluminum Reduction Plants

Prepared by:

_____ _____
Bruce C. Jordan (Date)
Director, Emission Standards Division
U. S. Environmental Protection Agency
Research Triangle Park, NC 27711

1. The promulgated standards of performance would reduce hazardous air pollutant (HAP) emissions from existing and new primary aluminum reduction plants that are major sources of HAP emissions. Under section 112 of the Clean Air Act (CAA), as amended in 1990, the EPA is authorized to require the maximum degree of reduction in emissions of HAPs that is achievable, taking into consideration the cost of achieving such emission reductions, and any non-air quality health and environmental impacts and energy requirements.

2. Copies of this document have been sent to the following Federal Departments: Labor, Health and Human Services, Defense, Transportation, Agriculture, Commerce, Interior, and Energy; the National Science Foundation; the Council on Environmental Quality; members of the State and Territorial Air Pollution Program Administrators; the Association of Local Air Pollution Control Offices; EPA Regional Administrators; and other interested parties.

3. For additional information contact:

   Mr. Stephen Fruh
   Policy, Planning, and Standards Group (MD-13)
   U.S. Environmental Protection Agency
   Research Triangle Park, NC 27711
   Telephone: (919) 541-2837

4. Electronic copies of this document may be obtained from the EPA Technology Transfer Network (TTN). The TTN is an electronic bulletin board system which is free, except for the normal long distance charges. To access the BID for primary aluminum reduction plants:

   - Set software to data bits: 8, N; stop bits: 1
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## 1.0 SUMMARY

On September 26, 1996, the U.S. Environmental Protection Agency (EPA) proposed national emission standards for hazardous air pollutants (NESHAP) for primary aluminum reduction plants (61 FR 50586) under the authority of section 112 of the Clean Air Act as amended. Public comments were requested on the proposal in the Federal Register, and a total of 15 comments were received. Nine comments were received from the affected industry and its trade association, two from the States, one from an emission testing company, one from an association representing vendors of pollution control equipment and services, one from a trade association representing companies involved in recycling fuels to cement kilns, and one from an oil company. The comments that were submitted, along with responses to these comments, are summarized in this document. The summary of comments and responses serves as the basis for the revisions made to the standard between proposal and promulgation.

### 1.1 SUMMARY OF CHANGES SINCE PROPOSAL

The major change to the proposed rule was made in response to comments on the issue of incorporating the new source performance standards (NSPS). The provisions of the NSPS (subpart S of part 60) were incorporated into a new section (§ 63.845) of the final rule and included appropriate definitions from the NSPS. The NSPS was amended to allow the owner or operator to meet either the NSPS or the special provisions incorporated into § 63.845. Sampling and monitoring were streamlined by using the maximum achievable control technology (MACT) requirements and by developing a single emission limit for a potline rather than overlapping limits for both the potline and the affected potroom group. The NSPS opacity limit was also incorporated.

Minor changes were made to the rule following proposal as a result of public comments. The procedure for qualifying for a reduction in sampling frequency for secondary emissions of total fluoride from monthly to quarterly was added. The procedure is

more straightforward for both the regulatory authority and industry to implement, and it is designed to encourage plants to control emissions well below the applicable limits to qualify for a reduction in the sampling frequency.

A provision was added to the alternative control option for paste production plants to encourage pollution prevention measures, such as reducing the quantity of polycyclic organic matter (POM) that is used to produce paste. In addition, pitch storage tanks were identified as a separate source, and emission controls are required for new pitch storage tanks.

In response to comments and as discussed in the proposal preamble, Method 14A (formerly known and referred to as the "Alcan cassette" method) is included in the rule as an acceptable alternative method for determining secondary emissions of total fluoride (TF).

## 1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION

### 1.2.1 Alternatives to Promulgated Action

Control options for new and existing sources are discussed in Chapter 4 of the Technical Support Document for the proposed standards (Docket A-92-60, III-B-1). These control options reflect the different technologies and levels of emission control from which one is selected that represents MACT, considering costs, nonair health and environmental impacts, and energy requirements for primary aluminum reduction plants. The rationale for the selection of the standard is discussed in the Basis and Purpose Document (Docket A-92-60, II-H-1), the preamble for the proposed rule (61 FR 50586), and in the promulgation preamble.

### 1.2.2 Environmental and Energy Impacts

The environmental and energy impacts of the NESHAP are discussed in Chapter 5 of the Technical Support Document for the proposed standard and are summarized in this section. Nationwide emissions from primary aluminum potlines are estimated at 6,400 tons per year (tpy) of TF. After implementation of the final standards, these emissions will decrease by almost 50 percent to

3,400 tpy. Polycyclic organic matter emissions will be reduced by about 45 percent, from 3,200 tpy to 1,800 tpy. Total fluoride emissions from the anode bake furnaces are estimated at 700 tpy; POM emissions are estimated at 555 tpy. After control of all bake furnaces, TF emissions will be reduced by 97 percent and an 84 percent reduction will be achieved for POM emissions. Polycyclic organic matter emissions from paste production plants, estimated at 147 tpy at baseline, will be reduced by about 130 tpy, to about 16 tpy -- an 89 percent reduction from current levels. Emissions of other HAPs included in the TF and POM emissions will also be reduced, as will non-HAP pollutants such as PM. For example, PM emissions will be reduced by 16,000 tpy.

The generation of solid waste and wastewater will be reduced when at least one plant replaces its wet scrubber system with a dry alumina scrubber. The dry alumina scrubber captures fluorides and other pollutants and returns them to the reduction cell. The rule is estimated to have no significant effect on energy consumption.

### 1.2.3 Economic Impacts

The costs of the NESHAP are discussed in Chapter 6 of the Technical Support Document for the proposed standard. The economic impacts are discussed in the EPA document entitled "Economic Impact Analysis for the Primary Aluminum MACT Standard" (Docket A-92-60, II-A-20).

The total capital cost of the rule is estimated as about $160 million with a total annualized cost of $40 million per year. The major cost impacts for potlines are expected to occur from the installation of dry alumina scrubbers for the primary control system at one plant and work practices, operating procedures, maintenance and repair, and equipment modifications at most plants. A few plants may incur capital costs to replace or upgrade hoods or doors and to install automated equipment for improved emission control.

The cost estimates for paste production assume that the 18 plants without dry coke scrubbers to control POM emissions will

each install one. However, some plants may be able to meet the performance standard with dry alumina scrubbers or other control devices, or they may be able to utilize many of the components of their existing system. The estimated cost for control of anode bake furnaces assumes that the 5 of 17 plants without a dry alumina scrubber must each install one.

Currently, about one-third of existing potlines are sampled for TF regularly. Because of the flexibility provided in the rule, many plants are expected to take advantage of the use of hydrogen fluoride (HF) continuous emission monitors (CEMs) and Alcan cassettes for similar potlines, both of which are much less expensive than manual sampling using Methods 13 and 14. The nationwide capital cost estimate of $7 million for monitoring equipment includes new Method 14 manifolds, HF CEMs, and Alcan cassettes. The total annualized cost of monitoring (including capital recovery) is estimated as about $4 million per year after all plants are subject to the rule. These costs may be reduced significantly as plants qualify for reduced sampling frequency (e.g., quarterly instead of monthly). The CEM will have value as a process monitoring tool in addition to its use as a less expensive alternative for monitoring to determine compliance.

The market price increase calculation indicated that implementing the controls will result in a primary aluminum market price increase of less than 1 percent. As a result of the low market price increase and relatively inelastic demand, the corresponding changes in output, employment, and total revenue were also low (all less than 1 percent). Therefore, the economic impact analysis estimates that the final rule will not result in significant economic impacts for the primary aluminum industry.

## 2.0 SUMMARY OF PUBLIC COMMENTS

A list of the 15 commenters on the proposed standard and supporting documents, their affiliations, and the EPA docket number assigned to their correspondence are given in Table 2-1. The comments have been categorized under the following topics:

2.1 Emission Sources
2.2 Subcategorization
2.3 Incorporation of New Source Performance Standard
2.4 Total Fluorides
2.5 Emission Limits and Equipment/Work Practice Standards
2.6 Emission Monitoring
2.7 Emission Averaging
2.8 Test Methods and Alternatives
2.9 Costs and Economics
2.10 Reporting and Recordkeeping
2.11 Wording of Regulation and Clarifications
2.12 Miscellaneous

**TABLE 2-1. LIST OF COMMENTERS ON PROPOSED NESHAP FOR PRIMARY ALUMINUM REDUCTION PLANTS**

| Docket item number[a] | Commenter and affiliation |
|---|---|
| IV-D-1 | Alice E. Bloomhower<br>Regulatory Services Coordinator<br>Amoco Corporation<br>200 East Randolph Drive<br>Chicago, IL 60601-7125 |
| IV-D-2 | Chuck Kucera<br>Director, Environmental Affairs<br>Alumax Inc.<br>5655 Peachtree Parkway<br>Norcross, GA 30092-2812 |
| IV-D-3 | Elizabeth C. Smith<br>Manager, Air Quality<br>Reynolds Metals Company<br>P.O. Box 27003<br>Richmond, VA 23261-7003 |
| IV-D-4 | Gail M. Graban<br>Manager, Environmental Affairs<br>Ravenswood Aluminum Corporation<br>P.O. Box 98<br>Ravenswood, WV 26164 |
| IV-D-5 | Steve Wright<br>Environmental Manager<br>Columbia Falls Aluminum Company<br>2000 Aluminum Drive<br>Columbia Falls, MT 59912 |
| IV-D-6 | Michael J. Wax<br>Institute of Clean Air Companies<br>1660 L Street NW, Suite 1100<br>Washington, DC 20036-5603 |
| IV-D-7 | Steven Mrazek<br>Air Program Coordinator<br>Vanalco, Inc.<br>5701 NW Lower River Road<br>P.O. Box 9805<br>Vancouver, WA 98666-9805 |
| IV-D-8 | Robert P. Strieter<br>Director, Environmental Affairs<br>The Aluminum Association<br>900 19th Street, NW<br>Washington, DC 20006 |

**TABLE 2-1. LIST OF COMMENTERS ON PROPOSED NESHAP FOR PRIMARY ALUMINUM REDUCTION PLANTS (continued)**

| Docket item number[a] | Commenter and affiliation |
|---|---|
| IV-D-9 | Robert H. Colby<br>Chair, ALAPCO Air Toxics Committee<br>Bliss M. Higgins<br>Chair, STAPPA Air Toxics Committee<br>STAPPA/ALAPCO, Suite 307<br>444 N. Capitol Street, NW<br>Washington, DC |
| IV-D-10 | Roy H. Carwile<br>Manager, Air Programs<br>Aluminum Company of America<br>1501 Alcoa Building<br>Pittsburgh, PA 15219 |
| IV-D-11 | Kathy Fugiel<br>AmTest, Inc.<br>14603 N.E. 87th Street<br>Redmond, WA 98052 |
| IV-D-12 | Joseph R. Williams<br>Manager, Air Quality Program<br>Washington Department of Ecology<br>P.O. Box 47600<br>Olympia, WA 98504-7600 |
| IV-D-13 | Wayne Wooster<br>Environmental Manager<br>Goldendale Aluminum Company<br>85 John Day Dam Road<br>Goldendale, WA 98620-9302 |
| IV-D-14 | David M. Flannery, Esq.[b]<br>Robinson & McElwee<br>P.O. Box 1791<br>Charleston, WV 25326 |
| IV-D-15 | Craig Campbell<br>Technical Director<br>Cement Kiln Recycling Coalition<br>1225 Eye Street, N.W.<br>Washington, DC 20005 |

[a] The docket number for this rulemaking is A-92-60. Dockets are on file at EPA Headquarters in Washington, DC.

[b] Comments filed on behalf of Kaiser Aluminum and Chemical Corporation.

## 2.1 EMISSION SOURCES

**Comment:** Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 recommend deleting units managing heated liquid pitch from the definition of "paste production plant." Commenter IV-D-14 notes that the rule was not developed to regulate pitch tanks because no MACT floor was established. Commenter IV-D-3 suggests language clarifying coverage within the paste plant, but excluding raw material pitch storage tanks.

**Response:** The definition of "paste production plant" is clear on the point that all units within the paste plant that manage heated liquid pitch are included and must be controlled. The definition does not include pitch storage tanks that are remotely located and not a part of the paste production plant. The paste production plant includes any intermediate transfer tanks, "day" tanks, or pitch heaters or mixers within the plant that manage heated liquid pitch, and these units are subject to the emission control requirements for paste production plants.

The EPA reexamined this issue and determined that pitch storage tanks should be defined as a separate source. An examination of the available data indicated that MACT for existing pitch storage tanks was no control. However, one plant was found to have installed controls on a recently constructed pitch storage tank. In addition, the EPA found that a new pitch storage tank planned for installation in Canada would be installing a catalytic oxidizer to control pitch fumes with a control efficiency of at least 95 percent. Consequently, EPA determined that new source MACT for pitch storage tanks would require at least 95 percent control of POM, and these provisions were added to the final rule.

## 2.2 SUBCATEGORIZATION

### 2.2.1 Basis for Subcategories

**Comment:** The selection of seven source categories for potlines was supported by several industry commenters (IV-D-2, IV-D-4, IV-D-5, IV-D-7, IV-D-8, IV-D-10, IV-D-13, IV-D-15). Commenters IV-D-9 and IV-D-12 expressed concern about the number of and basis for establishing subcategories.

**Response:** Section 112(d) of the Act requires EPA to establish emission standards for each category or subcategory of major and area sources. Section 112(d)(1) of the Act states that "the Administrator may distinguish among classes, types, and sizes of sources within a category...in establishing such standards...." In establishing subcategories, EPA has considered factors such as air pollution control engineering differences, process operations (including differences between batch and

continuous operations), emission characteristics, control device applicability, and opportunities for pollution prevention.

The EPA's analysis of existing aluminum production processes and operations resulted in the designation of seven subcategories for potlines and no subcategories for bake furnaces or paste production plants. For the subcategories of potlines, the distinctions are based primarily on differences in the process operation, process equipment, emissions, and the applicability of control devices. Additional information on the subcategorization is included in the Basis and Purpose Document. Specific subcategories are discussed in more detail in responses to comments in this section based on questions related to each subcategory.

### 2.2.2 Data Used for the MACT Floor

**Comment:** Commenters IV-D-9 and IV-D-12 request more detail on how EPA selected the best-performing plants for each subcategory to determine the maximum achievable control technology (MACT) floor. Specifically, if potline emission data were limited for some subcategories, the commenters ask that EPA state explicitly where data were limited or not available for all potlines.

**Response:** The data used to determine the potlines to represent the MACT floor are documented in Docket Item II-I-15. As explained in the preamble and in the Basis and Purpose document, the median potline was chosen to represent the average emission limitation achieved by the top 5 potlines because there were fewer than 30 potlines in each subcategory. In other words, the potline with the third best emission control performance among the five best-performing potlines was chosen to represent the floor. After identifying the MACT floor potline, EPA and the State partners conducted additional emissions testing and/or gathered additional data from company measurements at the floor potlines during the MACT development process to determine the level of emission control the potline had achieved on a consistent basis.

In general, extensive data were available for fluoride emission control for all of the subcategories and MACT floor potlines except for CWPB3 and VSS2. Essentially no historical data were available for POM because this type of testing had not been required. Consequently, POM data were collected from sampling during the MACT test program at those potlines determined to represent the MACT floor and were supplemented by additional voluntary testing by the companies. The following discussion provides more details on the availability of data and the selection of the MACT floor potlines.

For the CWPB1 subcategory, the best-performing potlines were obviously the ones subject to the new source performance standard (NSPS). The top two potlines (with the best control of TF) were NSPS Lines A and B operated by Alumax in Mt. Holly, SC. The third best line chosen as the MACT floor was Line 3 operated by Noranda in New Madrid, MO. The next two best potlines were Lines 2 and 3 operated by Alcan in Seebree, KY. The data clearly indicated that the NSPS potline operated by Noranda was the third best in the top five for the CWPB1 subcategory. Historical data were supplemented by data collected from additional sampling during the MACT test program to characterize the performance of this potline.

Initially, the data in Docket Item II-I-15 indicated that the five potlines owned by Reynolds in Troutdale, OR, appeared to be the best performing for the CWPB2 subcategory. However, these lines were not used to determine the MACT floor for three reasons: (1) the lines had been shut down for several years, so there were questions as to whether they could be considered in determining the top 5 for existing sources, (2) the data collected for these lines were not by EPA methods (which would be used to enforce any resulting limits) and the representativeness of the sampling procedures were unknown, and (3) there was no opportunity to do additional testing by EPA methods to confirm the control levels achieved at Troutdale because the lines are currently shut down. The next best lines in this category were the eight lines operated by Kaiser at Mead, WA. Data were available for Line 1, which had been used to represent the performance of the other similar lines at this plant. This line was determined to represent the MACT floor for this subcategory. Historical data were supplemented by data collected from additional sampling during the MACT test program to characterize the performance of this potline.

Data that were available for Vanalco and Alcoa, Rockdale, indicate the control level was worse than that at the Kaiser Mead plant. Emission data were unavailable for other CWPB2 potlines at Ravenswood Aluminum and Ormet Corporation because these plants historically had not been required to test for fluoride emissions. Consequently, there was reasonable assurance that the MACT floor potline for CWPB2 was at Kaiser Mead.

The limited data available for the potlines in the CWPB3 subcategory (NSA) showed relatively poor emission control performance; however, the plant indicated that they were making significant improvements in emission control during the MACT development process. Their improved emission control performance, documented in Docket Item II-D-85, was used to establish the MACT floor rather than their historically higher level of emissions.

The three best potlines for the HSS subcategory were those at Kaiser, Tacoma, and the typical control level achieved by these lines was represented by Line 2. The data showed that the other HSS potlines operated by Reynolds in Longview, WA, clearly had poorer emission control performance than the Tacoma potlines. Historical data were supplemented by data collected from additional sampling during the MACT test program to characterize the performance of this potline.

In the VSS1 subcategory, the two best controlled lines were those operated by Northwest Aluminum, and the next three best were those operated by Goldendale Aluminum. Consequently, the best controlled potline at Goldendale (Line 1) was chosen to represent the MACT floor for VSS1 because it was the third best potline (median) overall. A large database of historical data was available for this potline to characterize the MACT floor performance level. Moreover, this potline is operated at the NSPS level of control.

For the VSS2 subcategory, the five potlines of interest were those at Columbia Falls Aluminum. However, there were very limited data available for this subcategory because the company had not performed historical sampling using a Method 14 manifold as required by the EPA reference method. Consequently, data were obtained by additional sampling during the MACT program at a potline that had a Method 14 manifold installed. These data were used to determine the MACT floor.

Additional details on the derivation of the MACT floor emission limits are provided in Appendix B ("MACT Floor Determinations") of the Basis and Purpose Document (Docket Item II-H-2). A listing of each data point used in the analysis is given in Appendix D ("Complete Listing of MACT Floor Data") of that document.

### 2.2.3 CWBP2 Subcategory

**Comment:** Commenter IV-D-12 notes that during the MACT development process, EPA considered subcategorizing CWPB potlines according to the number of anode changes per ton of aluminum produced. The commenter asks why this approach was abandoned and wants to know the basis for placing the Alcoa-Rockdale plant in the CWPB2 subcategory. Specifically, what values for the operational parameters (e.g., age, pot size, current) distinguish CWPB1 potlines from CWPB2 potlines?

**Response:** The EPA examined and considered several criteria to differentiate among prebake potlines with respect to their ability to control emissions, including age, pot size, anode weight, amperage, frequency of anode changes, etc. As the commenter suggests, the initial analysis of anode changes per ton appeared to show a clear break between the older and newer CWPB

potlines. However, corrections to the calculation of anode changes per ton, primarily to aluminum capacity, were received from the companies, and after correction, there was no longer a clear break or two distinct populations of prebake potlines. Consequently, EPA decided that a single criterion would not be adequate to distinguish between CWPB1 and CWPB2 potlines.

The EPA examined several attributes of the facilities and looked for similarities and differences between the older and more difficult to control prebake potlines and the more modern ones that could achieve lower levels of emissions. After examining each plant individually, those named in the definition of CWPB2 were the ones that were found to be reasonably different from those in CWPB1 with respect to the ability to control emissions. After considering the criteria collectively (e.g., age, pot size, amperage), EPA determined that the Alcoa-Rockdale plant was more similar to the other older potlines in the CWPB2 subcategory than the more modern potlines in the CWPB1 subcategory. By naming and limiting these plants in the definition rather than establishing a single criterion, other prebake potlines would not be able to qualify for the CWPB2 subcategory by changing their process operation (i.e., to meet the criterion).

### 2.2.4 CWBP3 Subcategory

**Comment:** Commenters IV-D-9 and IV-D-12 state that several questions about the center-worked prebake 3 (CWPB3) category need to be considered before the proposed subcategory is established: How is "high purity" aluminum defined and measured? What percentage of a smelter's production must be "high purity" for it to fall into the CWPB3 category? If the production of "high purity" aluminum drops below the threshold, would the smelter then join the CWPB1 category? Are any other subcategories of smelters supplying "high purity" aluminum, without being in a specific subcategory? Could a "high purity" aluminum producer use a portion of alumina for scrubbing and blend reacted ore with unreacted ore to maintain purity specifications? Is there another engineering solution that should be considered?

**Response:** The basis for creating the CWPB3 subcategory is to allow producers of high purity/high conductivity aluminum to continue to make their product, which would be jeopardized if they were forced to install the dry alumina scrubbers that represent the MACT floor technology for CWPB1. The major producer of this aluminum is NSA, a division of Southwire Company, which is a national leader in the electrical conductor market. The production of high purity aluminum at this plant is made possible by the use of wet scrubbers, which remove the impurities that enter the process with the raw materials (primarily the alumina). At plants that use dry alumina

scrubbers, many of the impurities are captured and returned to the reduction cells with the reacted alumina where they contaminate the aluminum that is produced. The company also strictly controls the level of impurities accepted in raw materials and minimizes extraneous pickup of contaminants during processing.

The company stated that 90 percent of the aluminum produced in 1994 was high conductivity material, 85 percent was high purity, and 100 percent contained less than 0.008 percent vanadium, an important specification for many of their customers and for their captive use in the company's rod mill. They define "high purity" as a specific industry grade of aluminum (P0404) and have consistently averaged a purity of 99.94 percent or more compared to a range of 99.70 to 99.90 percent for other U.S. producers. The company's specifications for high conductivity are greater than 62.86 percent conductivity (IACS) and less than 0.008 percent vanadium.

The company provided information indicating that the use of wet scrubbers was essential to maintain product quality, that their market demands high purity and high conductivity material, and that NSA's future would be threatened by the loss of these markets due to a reduction in quality. Additional details and documentation are provided in Docket Item II-D-85.

As the commenter suggests, some other aluminum plants can produce high purity aluminum. However, these plants can dedicate only a small portion of their reduction cells to the production of high purity metal because they must use the reacted (contaminated) alumina in other reduction cells. These plants use virgin (unreacted) alumina in a portion of the reduction cells to avoid introducing contaminants; however, because they use dry alumina scrubbers as the control device, they must use the contaminated alumina in the majority of their cells. The plant in the CWPB3 subcategory is different in that the vast majority of its production is high purity, and it can accomplish this with wet scrubbers and could not accomplish it by using dry alumina scrubbers.

The definition of "CWPB3" in the rule includes only this one plant, which prevents any other plants from converting to wet scrubber technology and to qualify for the slightly higher limits in the CWPB3 subcategory. In addition, if this plant stopped production of high purity alumina or installed dry alumina scrubbers, the definition of CWPB3 would no longer apply to this plant and it would then be subject to the slightly more stringent limits of the CWPB1 subcategory.

### 2.2.5 VSS2 Subcategory

**Comment:** Commenter IV-D-12 states that the information provided to discuss the feasibility of using roof scrubbers for the VSS facility in Montana inappropriately relies on the performance of wet roof scrubbers used by a side-work prebake facility. The commenter suggests that a better comparison would be between the type of wet roof scrubbers that could be purchased today and how they would perform under the weather conditions experienced at the Montana plant. The commenter asks if EPA consulted with any manufacturers to determine the ability of contemporary roof scrubbers to operate under freezing conditions and states that not enough information has been provided to document that the plant could not operate the scrubbers 40 percent of the time. The commenter also asks that EPA evaluate the plant's ability to meet the VSS1 MACT floor standards through use of work practices and control options other than wet roof scrubbers.

**Response:** The details and rationale for the development of the VSS2 subcategory are provided in Appendix A ("Rationale for Subcategories of Sources for the Primary Aluminum Industry") in the Basis and Purpose document (Docket Item II-H-2). The primary basis was that wet roof scrubbers were not a demonstrated technology that could be operated continuously in very cold climates, based on their problematic operation at another plant in the State of Washington during cold weather. At that plant, freezing cold weather forces their shutdown with the concurrence of the State agency. The analysis of temperature extremes did not conclude that these scrubbers would be shut down 40 percent of the time, as the commenter suggests. The analysis concluded that there was a potential for shutdown 20 to 40 percent of the time based on historical temperatures in Montana and the conditions under which the other plant with wet roof scrubbers shut their scrubbers down.

During the process of gathering background information, the EPA investigated the use of wet roof scrubbers at various locations both inside and outside of the U.S. All of the information indicated that wet roof scrubbers had been operated only in climates warmer than that of Montana, and no information was found that indicated they had ever been operated successfully in such a climate. Consequently, the VSS2 subcategory was developed because the technology associated with VSS1 had not been demonstrated as feasible for the Montana plant and because of uncertainties associated with control efficiencies that might be achieved by the technology in this application.

Consequently, the EPA looked at alternatives other than wet roof scrubbers that were available to this plant to reduce emissions. Through improved equipment maintenance, better capture efficiency, and improved work practices, this plant has

reduced TF emissions over the years and has achieved an average level of control of 2.2 lb/ton or better (i.e., less than 2.2 lb/ton escapes from the cells). This level of control is superior to that of the other VSS plants when compared on a similar basis to the lb/ton of TF escaping from the reduction cells. For example, data collected at Northwest Aluminum during the MACT test program in 1994 showed levels of 6 to 13 lb/ton escaping the reduction cells. At Goldendale Aluminum, the quantity escaping the cells is on the order of 3.6 lb/ton (based on an average of 1.8 lb/ton from the roof scrubbers for 1989-1992 and a control efficiency of 50 percent for TF as estimated by the plant). Therefore, the VSS2 plant has improved work practices and capture efficiency more than the VSS1 plants with wet roof scrubbers, which rely on the scrubbers to obtain comparable or slightly better overall levels of TF control.

### 2.2.6 Change in Subcategories

**Comment:** Commenter IV-D-2 believes that the rule should not require a plant that changes subcategories to meet the more stringent emission limit of either the old or the new subcategory emission limit. This negates additional environmental benefits such as reduced perfluorocarbon emissions and the elimination of wastewater treatment. The rule should include an exception if the owner or operator can demonstrate a greater net environmental benefit would be achieved by applying the less stringent limit when subcategories are changed.

**Response:** The purpose of the provision about changing subcategories is to prevent plants from changing their operations and increasing HAP emissions simply by changing subcategories. If the change in process or operation results in lower HAP emissions, there would be no concern about applying the more stringent limit. There would be a concern if an increase in HAP emissions is projected, as the commenter implies. However, when a potline is converted to a more modern and efficient process, there are opportunities for upgrading and improving the emission control capabilities, including better hooding and shields that prevent the escape of emissions as well as improvements in the efficiency of the primary control system.

There is currently no viable way of offsetting increases in HAP emissions by decreasing emissions of pollutants that are not HAPs or by decreasing other non-air environmental effects, and such an approach would be difficult to develop and would be unlikely to meet the requirements of section 112 of the Act (e.g., that all sources meet the MACT level of control).

## 2.3 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD (NSPS)

***[The proposal preamble requested comments on removal of the NSPS, incorporating it into the MACT standard, and what changes would be required to accomplish it.]***

### 2.3.1 Removal or Retention of NSPS

**Comment:** Commenters IV-D-2, I-D-3, IV-D-4, IV-D-7, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 contend that the NESHAP is more rigorous than the NSPS in many respects. The EPA should remove the NSPS to eliminate regulatory duplication and incorporate certain provisions into the NESHAP. Commenter IV-D-8 cites EPA White Paper No. 2 in support of deleting the NSPS and provides a side-by-side analysis of the two standards. Commenter IV-D-13 believes the NESHAP should entirely supersede the NSPS. Commenters IV-D-9 and IV-D-12 think that NSPS and NESHAP requirements should be combined, if all unique requirements of the NSPS are incorporated into the NESHAP and the resulting combined requirements are at least as stringent as the individual rules.

**Response:** The EPA agrees that the incorporation of the NSPS provisions into the MACT standard must not result in a rule that is less stringent. More details on this issue are provided in the next section.

### 2.3.2 Changes Required to Incorporate the NSPS

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-7, IV-D-8, IV-D-10, and IV-D-14 recommend incorporation of certain provisions in the final MACT standard, including the reduced frequency for monitoring at three NSPS plants that has already been approved; NSPS provisions for less frequent monitoring upon demonstration of good emission performance; a more lenient standard for subcategories of potlines with exemplary performance; adding definitions of "potroom" and "potroom group," "potroom modification," "increase in total fluoride emissions," and "potroom reconstruction" with additional emission limits; and emission limits based on a weighted production average for potlines containing potline groups. According to these commenters, the NESHAP need not incorporate other aspects of the NSPS such as the opacity limit and monitoring requirements. Commenter IV-D-14 also recommends adding a definition of the term "expansion modification."

Commenter IV-D-12 states that the following changes must be made to the proposed rule to remove the NSPS and maintain equivalent stringency: (1) the NSPS definition for "potroom" and "potroom group" must be included, (2) the NSPS provisions for "reconstruction" and "modification" must be adopted because they are more stringent than those under the MACT standard,

(3) provisions must be included for an emission limit of 1.9 lb/ton (for prebake) and 2.0 lb/ton (for Soderberg) for the potroom or potroom group that would otherwise have been subject to the NSPS, and (4) the opacity limits in the NSPS must be retained.

**Response:** Following the receipt of comments and no indication that anyone was opposed to incorporation of the NSPS, EPA conducted additional discussions with all stakeholders. Representatives from each of the 14 States that have primary aluminum reduction plants were contacted and were provided the opportunity to discuss the issues and provide comments. Similar discussions were held with the Aluminum Association and industry representatives, who also provided comments.

Based on these discussions, a general consensus was reached on how the NSPS could be incorporated into the NESHAP. The NSPS requirements were included in a separate section of the NESHAP, and these provisions apply only to emissions of TF. A source subject to the NSPS can choose to comply with either the NSPS or with the special provisions incorporated into this rule. They apply only to Soderberg potlines and prebake potlines in the CWPB2 and CWPB3 subcategories because other types of existing potlines are subject to TF emissions limits under the NESHAP that are more stringent than the NSPS limits. Anode bake furnaces are not included because the NESHAP limits for existing bake furnaces are equivalent to those in the NSPS, and the NESHAP limits for new bake furnaces are much more stringent than those in the NSPS. The results of the discussions and the changes to the proposed rule are summarized in the following sections.

There was general agreement that the part 60 definitions of "modification" and "reconstruction" should be incorporated so that any new, modified, or reconstructed potroom group would trigger the NSPS provisions that have been included in the NESHAP. In other words, any potroom group that would have become subject to the NSPS because of the part 60 provisions would become subject to the special provisions incorporated into subpart LL of part 63. This was accomplished by adding definitions for "potroom group modification" and "potroom group reconstruction" that matched the requirements in part 60. The modification would occur if there was an increase in the total or overall TF emissions from the potroom group (i.e., changes that result in a decrease in emissions in one part of the potroom group and an increase in another part of the group are not modifications if total emissions from the group do not increase).

The EPA decided not to incorporate only the lower NSPS limits as suggested by some commenters or only the higher limits recommended by other commenters. Instead, both sets of limits were incorporated into the NESHAP with the same language as that used in the amended NSPS. In other words, the lower limits apply

unless the owner or operator can meet the exemplary operation requirements as stated in the NSPS, in which case the upper limits would apply. This requires that the owner or operator demonstrate that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the potline during the performance test.

Additional insight into proper operation and maintenance is given in the proposal preamble for the amended NSPS (45 FR 44203), which lists these items as basic to good control of emissions from prebake plants:

(1) Hood covers should fit properly and be in good repair;
(2) the hood exhaust rate should be increased for individual pots when hood covers are removed (if there is an adjustable air damper system);
(3) hood covers should be replaced as soon as possible after each potroom operation;
(4) dust entrainment should be minimized during materials handling operations and sweeping of the working aisles;
(5) only tapping crucibles with functional air return systems should be used; and
(6) the primary control system should be regularly inspected and properly maintained.

For horizontal stud Soderberg potlines, Items (4) through (6) apply, but Items (1) through (3) are replaced by the following because of differences in pot design:
(1) Side and end doors should fit properly and be in good repair;
(2) the exhaust rate should be increased for individual pots when a side or end door is open (if there is an adjustable air damper system); and
(3) side and end doors should be closed as soon as possible after each potroom operation.

The following variations are applicable to vertical stud Soderberg potlines:
(1) An ore cover should be maintained on the pot;
(2) the collector skirt and burner should be in good repair; and
(3) tap holes should not be opened too far in advance of the tap.

Another issue was related to the fact that the NSPS limits apply to a potroom group whereas the NESHAP limits apply to a potline. Because of many variations in the configuration of potrooms and potlines in the industry, limits for both would result in a somewhat confusing situation of duplicative emission limits and other requirements for certain reduction cells and unnecessary requirements associated with monitoring, reporting,

and recordkeeping for both potroom groups and the potline. To resolve this issue, a method was devised in the NESHAP to combine the limit for the NSPS potroom group with that for the NESHAP potline based on the production capacity of the reduction cells that would be subject to each set of limits. The result is a single TF emission limit for the entire potline that maintains equivalent stringency, and it has the additional advantage of allowing the use of the NESHAP potline requirements for monitoring, reporting, and recordkeeping to avoid unnecessary duplication.

The opacity issue was resolved by incorporating the 10 percent limit for potroom groups from the NSPS into the NESHAP. However, the provisions in part 60 that allow the development of an alternative opacity limit when the facility demonstrates that the mass emission limits are being met were also included in the NESHAP. The alternative opacity limit cannot exceed 20 percent. Historically, opacity has been measured routinely for the discharge stacks of primary control systems. However, the EPA has no indication that the opacity of a potroom group roof monitor has been measured using Method 9.

The EPA decided that additional provisions for anode bake furnaces were not necessary because the NESHAP requires that existing furnaces be controlled at levels equivalent to what the NSPS would have required for new, modified, or reconstructed furnaces. This ensures that the MACT floor control technology (dry alumina scrubbers) or the equivalent will be installed on all bake furnaces to control emissions. There was no need to incorporate the NSPS opacity limit of 20 percent for bake furnaces because the MACT floor technology will achieve lower opacity levels, the NESHAP monitoring requirements for the control device are more comprehensive, there is no loss in stringency, and most States already have general opacity limits of 20 percent for stationary point sources.

In consolidating the two rules, the EPA decided to use the sampling frequency and monitoring provisions of the NESHAP. They offer several advantages over the NSPS provisions alone, there is no effect on the relative stringency or the emission reductions achieved, and this will reduce unnecessary monitoring, reporting, and recordkeeping. In addition, the NESHAP requires that any new, modified, or reconstructed potroom group be sampled for TF emissions, which is what the NSPS would have required. Sampling can be performed effectively for the potroom group with the addition of new monitoring equipment or the expansion or adaptation of existing monitoring equipment in the same potline if the sampling system is determined to be representative of the entire potline containing the potroom group and if the relevant permitting authority determines that the sampling system meets the requirements of the reference test methods. In addition, the sampling of that potroom group may be used to determine emissions

from the total potline if they are representative of the entire potline. To be representative of the entire potline, the sampling system must not cover only or primarily new reduction cells, which would be expected to have better hooding and emission control than older cells.

### 2.3.3 Relationship to New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

**Comment:** Commenter IV-D-7 asks for discussion of how existing NSR and PSD rules affect the NESHAP. Commenter IV-D-7 asks for clarification of what TF limit would apply in the event of a modification or new source review. Commenter IV-D-10 believes that conversion and installation of equipment in order to comply with the Primary Aluminum MACT should not trigger the NSPS or PSD and states that this would be consistent with the proposed language of the NSR revision. The commenter requests that the language of the preamble and the rule be changed to reflect that modifications made to affected sources to come into compliance with Primary Aluminum MACT are exempted from NSR applicability.

**Response:** The NSR and PSD requirements are not changed or directly affected by the provisions in the NESHAP. However, the NESHAP incorporates the NSPS provisions for primary aluminum reduction plants, which will reduce duplicative monitoring, reporting, and recordkeeping requirements while maintaining equivalent stringency in the applicable emission limits. In addition, the incorporation of the NSPS includes language from part 60 that excludes from the definition of "modification" the addition of an emission control system that results in the reduction of air pollutants as the commenter suggests.

## 2.4 TOTAL FLUORIDES

***[The proposal preamble requested comments on the use of total fluorides as a surrogate for hydrogen fluoride.]***

**Comment:** Industry Commenters IV-D-2, IV-D-4, IV-D-7, IV-D-8, IV-D-10, and IV-D-13 support the selection of TF as a surrogate measure of HF, the listed HAP under section 112(b) of the Act.

State Commenters IV-D-9 and IV-D-12 request that EPA continue working to develop an HF or gaseous fluoride (GF) standard rather than a TF standard as proposed for these reasons: (1) HF, not TF, is the HAP identified in the Clean Air Act; (2) because HF is gaseous and TF is both gaseous and particulate fluoride, plants may implement work practices that reduce particulate fluoride (and TF) without improving control of HF or reducing HF emissions; and (3) measurements of HF will be

necessary to calculate residual risks seven years after the MACT is in place, as required by section 112(f) of the Act.

The commenters recommend using a method that more closely approximates HF, such as GF as measured using the "back half" of Method 13, and further states that EPA should quantify inaccuracies in this approach before eliminating a GF standard from consideration. As an alternative to GF measurement, the commenters recommend setting a collection or hooding efficiency standard because such a standard would provide a more direct means of controlling HF collection and treatment and would promote work practice behavior to improve HF capture. Using sulfur dioxide or a carbon monoxide as a hooding efficiency indicator gas may avoid many of the apparent problems with measuring HF or GF.

Commenter IV-D-10 notes that some have suggested that collection efficiency (or "hooding" efficiency) might be a good way to measure how well a potroom HF removal system is functioning and that sulfur dioxide might be a good way to measure such efficiency. The commenter states that neither of these is a good idea and that such tests are difficult to coordinate and expensive to perform.

**Response:** This issue was discussed at length in section V.A of the proposal preamble, "Selection of Pollutants" (61 FR 50592, September 26, 1996). The proposal also requested data that could be used to support the development of any recommended alternatives to the use of TF as a surrogate for HF. No new data or additional information was received. Consequently, the EPA continues to believe that TF is a reasonable surrogate for HF, and EPA plans to promulgate a MACT standard for TF as proposed for the reasons discussed in the proposal preamble. Although this rule does not establish a collection or hooding efficiency standard, § 63.850(a)(8) of the final rule allows the regulatory authority to request that the owner or operator submit an engineering plan that describes the techniques that will be used to address the capture efficiency for gaseous pollutants. The rule will not affect State requirements (such as those in the State of Washington) that relate to capture efficiency.

## 2.5 EMISSION LIMITS AND EQUIPMENT/WORK PRACTICE STANDARDS

### 2.5.1 Alternative Controls for Paste Production Plants

**Comment:** Commenter IV-D-6 believes that numerical emission limits or emission reduction requirements should be required for paste production plants rather than an equipment standard based on dry coke scrubbers. Commenter IV-D-12 recommends that EPA establish an emission limit for paste production based upon the best performing paste plant. Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 recommend that the standard for

paste production plants under § 63.843(b)(3) be revised to cover the entire paste plant "system" rather than the "control device" to allow and encourage pollution prevention measures, such as switching from pitch that has a high content of polycyclic organic matter (POM) and polycyclic aromatic hydrocarbons (PAH) to pitch that has less POM and PAH. They suggest that this measure to reduce POM emissions can be accounted for in the alternative controls demonstration. This change also should be made in recordkeeping provisions [§ 63.849(e)(4)(v)]. Commenter IV-D-8 also requests that the final rule specify that emissions generation reductions be included in determining the "system" reduction efficiency.

**Response:** The first choice for paste plants was the development of an emission standard for paste production plants; however, there were too few POM data (only two data points) to develop defensible and achievable limits. One reason for this is that the control technology is relatively new, and there were no data collected by EPA test methods prior to this rulemaking. Therefore, the development of a quantitative standard was not feasible or practicable. The problem was also complicated by the numerous variations in the design and operation of paste plants. However, the available information and engineering judgement indicated that the best POM control technology in use for paste plants was the dry coke scrubber, which was determined to represent MACT. For these reasons, an equipment standard requiring the use of a dry coke scrubber or equivalent alternative control for paste production was developed under section 112(h) of the Act.

Comments were received from both the industry and States asking for consideration of control techniques, including pollution prevention, that might provide a level of control equivalent to or better than a dry coke scrubber. After consideration, EPA decided that a streamlined approach could be used to implement more efficiently section 112(h)(3) of the Act, which allows the development of an alternative means of emission limitation if it achieves an emission reduction at least equivalent to that achieved by the design, equipment, work practice, or operational standard. An emission limit for POM in lb/ton of paste was developed from the limited data associated with two of the best controlled plants in the industry. Although the limit may represent a level of emission control more stringent than the equipment standard that was determined to be MACT, an alternative standard in lb/ton of paste will provide opportunity for pollution prevention measures (such as reducing the quantity of POM used in paste production). The alternative standard also provides the opportunity to qualify other types of emission controls that might be developed in the future that are more efficient than the dry coke scrubber.

The alternative limit in lb/ton does not preclude plants from petitioning for other alternative means of emission limitation under section 112(h)(3) of the Act based on demonstrating an equivalent or greater emission reduction. However, it provides one method to implement the provisions for alternative standards more efficiently. As required in section 112(h)(4) of the Act, when EPA has sufficient data to replace both parts of the current standard for paste production plants with a quantitative emission limit, EPA will revise that standard accordingly.

### 2.5.2 Control Efficiency for Paste Plant Alternative

**Comment**: Commenter IV-D-3 asks that EPA revise the criteria to require an overall control system efficiency of 90 percent rather than the 90 percent for batch operations and 95 percent for continuous operations. Examination of the inlet concentration data shows the POM loadings on a lb/ton basis are very similar. Commenter IV-D-14 supports the proposed efficiency requirements for alternative controls of 90 and 95 percent for batch and continuous operations, respectively.

**Response**: As discussed in the previous response, the control efficiency alternatives for batch and continuous processes were removed and replaced with lb/ton limits. The mass emission limits make it unnecessary to specify control efficiencies and provide more flexibility in the choice of control options, especially pollution prevention.

### 2.5.3 Achievability of Limits for Anode Bake Furnaces

**Comment**: Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 question the achievability of the limits for new and existing bake furnaces. Commenter IV-D-8 specifically questions the use of the 95th percentile due to the limited available data. The final rule should recognize that the proposed limits may need to be reassessed in the future.

**Response**: The data for anode bake furnaces support that the proposed emission limits are achievable. The limits developed for existing bake furnaces have been achieved by several plants, and the limits for new bake furnaces were developed at the 99th percentile to ensure they had been achieved. Opportunities for improved control other than the installation of dry alumina scrubbers are available, and each owner or operator should investigate these opportunities thoroughly. For example, careful cleaning of recycled anodes to remove fluorides has been demonstrated to reduce fluoride emissions from anode bake furnaces. Careful control and optimization of combustion conditions improve destruction of POM compounds and reduce POM emissions.

### 2.5.4 Achievability of VSS2 Subcategory POM Limit

**Comment**: Commenter IV-D-5 notes that because there are no data for a VSS2 facility, the POM potline limits are based on emission data from VSS1 facilities. This commenter requests that EPA consider new POM data submitted between December 1, 1996, and October 1, 1997, and add it to the rulemaking record.

In a related comment, Commenter IV-D-5 notes that the following quote in the preamble requires correction: "The VSS2 subcategory does not have wet roof scrubbers; consequently, this approach provides MACT emission limits that have been achieved for **VSS1** [not VSS2] potlines."

**Response**: The proposed POM limit for the VSS2 subcategory was based on data from VSS1 potlines because there were no valid data available at that time for POM emissions from VSS2 potlines. Following proposal, POM data were collected for the MACT floor VSS2 potline, and a company representative asked that EPA consider their data in establishing the POM limit. The POM data were collected by EPA reference methods (Methods 14 and 315) and included a total of 18 validated runs at the MACT floor potline. The EPA analyzed the new POM data and concluded that the POM limit for the VSS2 subcategory should be reduced from 3.7 lbs/ton to 3.6 lbs/ton. The emission test data and the analysis are documented in the rulemaking docket. [See Docket Item IV-B-1.] The EPA appreciates the effort of the company to perform emission testing and to provide data that improve the technical basis of the POM limit for VSS2 potlines.

### 2.5.5 Achievability of HSS Subcategory POM Limit

**Comment**: Commenter IV-D-3 questions the consistent achievability of the POM limit for the HSS subcategory because of the scant data that were available for the MACT floor facility. Commenter IV-D-14 supports the POM limit for the HSS subcategory and submitted additional POM data for the MACT floor facility that support the achievability of the limit.

**Response**: The EPA believes that the data show that the POM limit is achievable for the HSS subcategory by plants using the MACT floor technology. Note that the control technology used for the primary system for the MACT floor plant is a dry alumina scrubber, whereas the plant concerned about the achievability uses an electrostatic precipitator. Improvements may be needed in the electrostatic precipitator primary control system and in the potline's capture system to reduce fugitive emissions to achieve the same level of control achieved by the MACT floor plant.

### 2.5.6 Bake Furnace Production Rate

**Comment**: Commenter IV-D-14 suggests that in the equations to be used for determining compliance, the determination for the rate of green anode material introduced into the furnace should be based on the monthly average production rate rather than an hourly rate.

**Response**: The EPA recommends that the average production rate for the calendar month that includes the time in which the compliance test is conducted be used to determine the rate at which anode material is placed in the furnace. The approach is consistent with that used to determine aluminum production, which will be changed from a 30-day average to a calendar month average to be consistent with the way in which most plants perform these measurements for their accounting system. In the equations used to determine emissions, this rate would be converted to an hourly average for use in calculating emissions in terms of lb/ton of anode material or lb/ton of aluminum produced.

### 2.5.7 Availability of Data for Paste Plants

**Comment**: Commenter IV-D-7 notes data were insufficient for paste plant POM limits and states that testing, reporting, and periodic evaluations are needed to obtain data that will be required to address residual risk provisions. This commenter suggests that EPA add an annual testing and reporting requirement for POM from coke scrubber outlets by Method 315 to address the lack of data. Commenter IV-D-12 also notes that there is no requirement to measure POM emissions from paste production plants and asks that such measurements be required because POM emissions data will be needed to perform the risk assessment required by the Act.

**Response**: The standard for paste plants is an equipment standard (dry coke scrubbers); consequently, emission testing is not required to demonstrate compliance for plants using dry coke scrubbers. There were concerns within EPA associated with a requirement for emission testing when the test results were not to be used to determine compliance. However, plants that want to qualify alternative control equipment must conduct POM emission testing. The EPA does not believe it is appropriate to require POM testing at all paste plants under this MACT rule to collect data for potential rulemaking in the future. Data for POM emissions from paste plants may be collected in the future under the program to evaluate residual risks, depending on the data needs and priorities of the residual risk program as it is implemented.

### 2.5.8 Other Technologies for Paste Production Plants

**Comment**: Commenter IV-D-6 believes a technology other than a dry coke scrubber that is more effective, such as a catalytic oxidizer, that has been demonstrated as an effective control device for paste plant emissions, would be precluded even with the provisions for alternative control devices. Commenter IV-D-12 states that requiring the capture of emissions from the paste production plant to meet "generally accepted engineering standards for minimum exhaust rates ..." effectively results in not all plants' having MACT and appears to allow each plant to set its own standard.

**Response**: Although an equipment standard was established, EPA did not want to preclude the use of other control devices that may control emissions as well as the dry coke scrubber, or even better. Consequently, emission limits in lb/ton for batch and continuous processes based on dry coke scrubber performance were established to allow other devices to qualify as alternatives.

The EPA believes that the catalytic oxidizer mentioned by the commenter, while not in common use and not the MACT floor technology, could be qualified as an acceptable alternative control by demonstrating that it achieves the applicable emission limit. Thermal and catalytic oxidizers have been used in other applications to achieve 99 percent (or more) destruction efficiency of organic compounds.

The requirements for the capture system are structured to ensure that all plants meet the design requirements established in "Industrial Ventilation: A Manual of Recommended Practice." Rather than letting each plant set its own standard, as the commenter suggests, the proper design and operation of the capture system is a requirement of the rule to ensure that all plants use the MACT floor technology. Without this requirement, the commenter would have a valid concern, but the requirement was included in the rule specifically to address the issue raised by the commenter.

### 2.5.9 Equipment Standard

**Comment**: Commenter IV-D-12 notes that the MACT floor control technology for primary emissions for six of the seven subcategories and for all new potlines is a dry alumina scrubber. The commenter then asks if EPA intends that an existing plant that uses wet electrostatic precipitators be required to install dry alumina scrubbers?

**Response**: No. The standard for potlines is a performance standard, and dry alumina scrubbers were identified as the technology used by the MACT floor potlines to achieve the limits.

However, the performance standard allows the owner or operator to use any means of control available if the technology chosen achieves the performance standard. Consequently, the owner or operator may be able to upgrade existing control technology or to install some new, innovative technology that might perform even better than the MACT floor technology.

### 2.5.10 Work Practice Standard

**Comment**: Commenter IV-D-12 states that based on observations during smelter inspections in Washington, he believes there are work practice and operation and maintenance improvements that could be made even at smelters that have been defined as the MACT floor. Commenters IV-D-9 and IV-D-12 favor setting work practice standards and operation and maintenance standards that would improve control of emissions. The commenters ask how EPA intends to measure and enforce work practice programs, inspection procedures, and maintenance programs for repairing or replacing damaged hoods and seals. Commenter IV-D-9 recommends that EPA, State, and local agencies develop a work practice check list and weight the activities so that audits and the resulting scores are meaningful measures of emission reductions.

**Response**: Section 112(h) of the Act only allows development of a design, equipment, work practice, or operational standard when it is not feasible or practicable to establish an emission standard. Consequently, a work practice standard was not developed for potlines because there was an extensive database on TF emissions on which to base an emission standard. An emission standard allows the owner or operator to meet the emission limit using any combination of control techniques, including work practices, upgrading equipment, process modifications, pollution prevention, etc. It also provides flexibility for developing innovative controls or pollution prevention measures in the future that may be more cost effective by not mandating work practice techniques. The owner or operator will find it necessary to have adequate work practices in place to meet the emission limits in the rule; consequently, it is not necessary to develop a work practice standard.

### 2.5.11 Stringency of the Limits

**Comment**: Commenter IV-D-12 notes that the proposed standard would raise the control performance of nearly half of the industry to the level of control achieved by the best performing plants. The commenter then states that this does not seem to achieve the goals stated in section 112(d) of the Clean Air Act: that emissions limitations should be at least as stringent as the average achieved by the top 12 percent of existing sources or the average of the top five sources in categories with fewer than 30 sources.

**Response:** As discussed earlier in Section 2.2, the emission limits are as stringent as "the average emission limitation achieved by best performing 5 sources" (when there are fewer than 30 sources in the category or subcategory). The average emission limitation achieved for potlines is based on the median potline in the group of five. However, the primary aluminum industry has implemented emission controls over the past several years for many reasons, including the economic incentive to recover fluoride that would otherwise be emitted and to meet emission limits established by the States and EPA. As a result, many plants are already fairly well controlled, even if their performance is not quite as good as the MACT level. The effect is that several plants will have to make only nominal additional reductions in emissions to achieve MACT, and the greatest reductions will occur at a few plants that have the poorest emission control in the industry.

### 2.5.12 Limits for a Modified Line

**Comment:** Commenter IV-D-12 asks why a modified potline would continue to be subject to MACT for existing sources and, if it would have otherwise been an NSPS source, why it would not be subject to the NSPS limits for opacity and TF (if more stringent than MACT).

**Response:** Under the MACT rule and as stated in the General Provisions to Part 63, a modification does not subject a source to new source MACT. However, the rule incorporates the NSPS requirements and defines "potroom group modification." Consequently, any change that qualifies as a potroom group modification would subject the source to the special provisions in § 63.845, which contains the NSPS requirements for TF and opacity.

## 2.6 EMISSION MONITORING

### 2.6.1 Work Practices to Demonstrate Similar Potlines

***[The proposal preamble requested comments on the monitoring of work practices for similar potlines instead of monitoring by emission measurements.]***

**Comment:** In responding to the request for comments on the use of work practice inspections as a monitoring alternative for similar potlines, Commenters IV-D-9 and IV-D-12 state that such an approach would require careful selection of the practices to audit, and the inspections must be frequent enough to be representative of normal and routine operations. The commenters believe that work practice audits could be very burdensome for both the industry and the regulatory agencies, while measuring actual emissions would be less burdensome and provide much more useful information. The commenters recommended that each work

practice be "weighted" in correlation to the work practice's relative contribution to gaseous emissions, that the frequency be similar to that of Method 13 and 14 testing, and that the audits provide a quality of data similar to that provided by Method 13 and 14 measurements.

Commenter IV-D-7 contends that production parameters combined with shield inspections constitute a solid demonstration of similar potlines, but does not agree with the proposed requirement for demonstrating the validity of the approach and correlating the results to measured emissions. According to the commenter, correlation of emission rates to shield inspection scores would be difficult because shield inspection scores are of a shorter duration than emission tests and the many factors which effect fluoride evolution and capture. Also, work practices should not be enforceable permit conditions because of the onerous reporting, recordkeeping, and certification requirements.

**Response:** The EPA concludes work practice inspections are not acceptable for monitoring similar potlines, primarily because the approach is unproven, would be difficult to implement, and better monitoring alternatives are available. The EPA believes that the direct emission measurements required in the rule are more appropriate. Consequently, work practice inspections were not included in the final rule as an alternative procedure for monitoring similar potlines.

### 2.6.2 Performance Specifications for HF CEMs

**Comment:** Commenters IV-D-9 and IV-D-12 request that EPA develop and standardize protocols and performance specifications to ensure minimum quality assurance and quality control when HF CEMs are used for alternative monitoring. The commenters claim many States are not prepared to evaluate these requests for approved alternatives, and that standardized protocols and performance specifications are needed to ensure minimum levels of performance for these instruments.

**Response:** The EPA plans to provide guidance to the States for evaluating and establishing minimum quality assurance and quality control programs for HF CEMs as part of its implementation strategy.

### 2.6.3 Enhanced Monitoring Credit

**Comment:** Commenters IV-D-2, IV-D-4 IV-D-7, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 recommend that the final rule include a provision acknowledging that the monitoring provisions in the rule, including the approved methods and alternatives, satisfy the enhanced monitoring provisions under section 114 of the Act and the Title I enhanced monitoring requirements for particulate matter emissions. Commenter IV-D-4 requests that the final rule

specify that the monitoring provisions satisfy the requirements of the compliance assurance monitoring (CAM) rule.

**Response:** As several commenters suggested, the CAM rule would not apply to the sources and pollutants regulated under the NESHAP. Standards promulgated after 1990 are not subject to the CAM rule under the assumption that the prescribed monitoring in such rules would meet the requirements equivalent to those required for CAM.

### 2.6.4 Exceedance of Operating Parameter

**Comment:** Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-8, IV-D-10, and IV-D-14 state that an exceedance of enforceable operating parameter limit for which the owner or operator has submitted a request for redetermination should not count toward the six allowable exceedances or automatically constitute a violation. Commenter IV-D-7 feels that exceedances should be a matter of enforcement discretion and any mention of what would constitute a violation should be deleted from the rule. Commenter IV-D-12 asks for EPA's basis in deciding that a violation occurs only after there have been six exceedances of a monitoring parameter (in any semiannual reporting period).

**Response:** The proposal preamble discussed at length why any single exceedance of the parametric monitoring limits should not be considered an exceedance of the emission limit and a violation of the standard (see Section III.E "Emission Monitoring and Compliance Provisions," 61 FR 50590, September 26, 1996). However, a limit was placed on the number of exceedances (six) allowed in a semiannual period to provide incentive to correct any problems with control devices promptly and to avoid recurring difficulties with control devices. Consequently, any exceedance of an enforceable operating parameter limit will count toward the six allowable exceedances, or will constitute a violation if a source has already had six exceedances. The fact that a facility has submitted a request for a redetermination of its operating parameter limits is no shield against enforcement of the existing permit limits. This is because the owner or operator could submit requests for redetermination to avoid a violation whenever control device monitoring indicates a problem. While the commenter is correct in pointing out that EPA may exercise prosecutorial discretion, such discretion is independent from the identification of a violation.

### 2.6.5 Less Frequent Monitoring for POM

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 recommend that monitoring provisions in the final rule be expanded to allow less frequent monitoring for POM upon demonstration of good emission control performance, as is allowed for TF.

**Response:** Reduced sampling was not considered for POM because the sampling is already reduced relative to sampling for TF. The rule contains provisions for reducing the frequency of TF sampling of secondary emissions from monthly to quarterly, but only requires quarterly sampling for POM secondary emissions (and only annual sampling for POM from the primary control system). The quarterly sampling of POM is necessary to ensure compliance.

### 2.6.6 Monthly Sampling for POM

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 suggest that emission monitoring requirements for POM in § 63.847(b) allow the owner or operator to sample at least three runs each quarter or at least three runs in any single month during the quarter.

**Response:** The requirement to perform a POM sampling run each month rather than three runs in one month once per quarter was to provide more representative sampling and to account for month to month variations. The EPA believes there are no great advantages in costs to sampling three times in a single month each quarter for POM rather than sampling each month, and the monthly sampling should provide more representative results. Consequently, this provision was not changed in the final rule.

### 2.6.7 Criteria for Similar Potlines

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 suggest clarifying the criteria for similar potlines in § 63.847(d), i.e., "same" operating condition, "same" cell and hooding design, "same" work practices, with "same" or better level of emission control by replacing "same" with "correspondingly similar."

**Response:** The EPA agrees that clarification is needed for the word "same" when identifying similar potlines. The rule was revised to indicate that two potlines are "similar" if their structure, operability, type of emissions, and volume and concentration of emissions are substantially equivalent.

### 2.6.8 POM Criterion to Demonstrate Similar Potlines

**Comment:** Commenter IV-D-13 suggests adding a new criterion to § 63.847(d)(1) for demonstration of similar potlines particular to POM emissions -- establishing a demonstrated anode carbon factor correlation. To use the carbon factor as a surrogate, the criteria in the rule must be met and the procedure approved by the regulatory authority. A lower carbon factor results in a lower pitch consumption, which results in lower POM emissions.

**Response:** Although the recommendation in the comment may have merit, no data or details were submitted to support it and show how well it correlates with emission measurements, or to indicate how the approach of a carbon factor would work for establishing that potlines are similar with respect to POM emissions. Factors other than carbon consumption affect POM emissions, such as the quantity captured and burned within the VSS collection system. However, this commenter has an opportunity under the final rule to make a demonstration of his recommended approach because the owner or operator can petition the applicable regulatory authority for an alternative method to monitor potlines that are similar.

### 2.6.9 Alternative Emission Limit for Similar Potlines

**Comment:** Commenter IV-D-2, IV-D-4, IV-D-8 and IV-D-13 recommend eliminating the word "equivalent" in the requirement for establishing an equivalent alternative emission limit under §§ 63.847(d)(3),(d)(4), and (d)(6). Commenter IV-D-12 requests that EPA specify a minimum acceptable coefficient of correlation ("R") between the reference method and alternative method in establishing equivalent alternative limits [§ 63.847(d)(4)(ii)].

**Response:** The EPA agrees that the word "equivalent" may be inappropriate because the intent was that an alternative limit be established to the satisfaction of the regulatory authority. "Equivalent" may imply to some that a perfect correlation between the reference and alternative method would be required, and a perfect correlation is not expected or needed. The rule leaves this approval/disapproval determination to the discretion of the regulatory authority. However, the EPA will provide guidance to the regulatory authority if needed on the acceptability of alternative methods.

### 2.6.10 Procedures for Reduced Sampling Frequency

**Comment:** Commenter IV-D-7 does not think there is any need for Federal Register publication to provide public notification of approval of reduced sampling frequency. Must the source wait for publication before instituting the change? The commenter suggests that notification be that required for an administrative permit amendment and that the notification and change be allowed to proceed concurrently. Commenter IV-D-10 asks that criteria for qualifying for reduced sampling frequency [§ 63.847(e)] be included in the rule and suggests using the approach in subpart VV [§§ 60.483-2(b)(2) and 60.483-2(b)(3)]: (1) for the first year each source would sample as the rule requires; (2) if compliance is demonstrated for four consecutive passes, then the sampling frequency is cut in half; (3) after two years of sampling at one-half frequency, then the sampling frequency becomes and stays an annual event; and (4) if the process or data

fail to demonstrate compliance at any point, the source then falls back to the previous frequency of measurement.

Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 suggest revising § 63.847(e) of the proposed rule, which would immediately reinstate monthly monitoring if excess emissions occurred under an alternative monitoring requirement that allows for less frequent sampling. The commenters recommend returning to monthly monitoring for a 3-month period and reinstating the alternative sampling frequency if no excess emissions occur.

Commenters IV-D-9 and IV-D-12 support the concept of reduced sampling if a facility consistently achieves compliance with an emission limit and has low variability. However, the commenters ask that EPA specify a minimum measure of acceptable variability for reduced sampling frequency to ensure consistent evaluations of these requests and to ease the burden on the regulatory authority.

**Response:** The EPA agrees with the commenters that the provisions for qualifying for reduced sampling can be improved by making them easier to implement and that there is no need for publication in the Federal Register. In addition, if they are structured properly, provisions for reduced sampling frequency can be used to obtain control performance well below the emission limit, which will result in additional emission reductions.

The EPA reviewed the performance of plants that had qualified for reduced sampling under the NSPS and also examined the average performance, variability, and emission limits achieved by the MACT floor plants. Based on this review, a procedure was developed that was designed to ensure that plants that qualified for reduced sampling had low variability, consistently met the limit, and achieved an average long-term performance that was well below the limit. The rule was revised to allow the monthly sampling of a potline's secondary emissions of TF to be reduced to quarterly if: (1) the overall average after 24 consecutive months of sampling was no more than 60 percent of the applicable limit and (2) no monthly average during the 24 consecutive months exceeded 75 percent of the applicable emission limit.

If an exceedance occurs while under the reduced sampling frequency, the plant must return to monthly sampling for at least 12 months. The plant can qualify for a reduction to quarterly sampling again when: (1) the average of all results over the most recent 24-month period is no more than 60 percent of the limit and (2) no more than one monthly average during the 24-month period exceeds 75 percent of the limit.

### 2.6.11 Criteria for Alternative Monitoring Methods

**Comment:** Commenter IV-D-7 believes the criteria for an acceptable alternative monitoring method should be expanded to include the upper bound approach, especially for CEMs, that was described for alternative monitoring of similar potlines. The rule as proposed requires that the results from sampling using a candidate alternative must be correlated to the results from sampling using the reference methods.

**Response:** This rule provides flexibility by allowing the development of a correlation between the two methods. It is possible that the owner or operator could propose to establish an upper (or lower) bound as part of that correlation development.

The final rule also requires the owner or operator to derive an alternative limit for the HF CEM or other alternative monitoring method. The owner or operator must demonstrate that the alternative method and limit will result in a level of emission control that is the same as or better than the level that would have otherwise been achieved.

### 2.6.12 Accuracy and Calibration of Monitoring Devices

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-7, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 suggest that § 63.847(k) be revised to require all monitoring devices to be certified for accuracy and calibration, with calibration in accordance with the manufacturer's specifications in lieu of certification by the manufacturer to meet accuracy requirements specified by the applicable regulatory authority.

**Response:** The EPA agrees because the original intent was the owner or operator would be responsible for the calibration (not the manufacturer), that the calibration be performed according to the manufacturer's instructions, and that the calibration specifications be determined by the applicable regulatory authority.

### 2.6.13 Daily vs Hourly Ore Flow Rate

**Comment:** Commenter IV-D-7 believes that monitoring longer-term control device operating parameters such as daily ore flow over hourly ore flow could better characterize emission control performance because a single excursion would not be the cause of an exceedance. For example, a bed of alumina ore could be stagnant for several hours before fluoride breakthrough occurs.

**Response:** The rule does not specify a frequency for parametric monitoring; consequently, the appropriate frequency must be determined by the applicable regulatory authority. However, the frequency can be no less than daily, and multiple

excursions beyond the monitoring parameter limits are counted only once per day for a given parameter on a given control device.

### 2.6.14 One Manifold per Potline

**Comment:** Commenter IV-D-7 asks that while § 63.848(d) states that one Method 14 manifold per potline in a potroom representative of the entire potline is required, this language should be added to § 63.846(d)(1) and (d)(2). Otherwise, the monitoring costs for potlines would be double.

**Response:** The EPA believes that § 63.849(d) ("Test Methods and Procedures") adequately and clearly states that only one Method 14 manifold is required per potline.

### 2.6.15 Operating Limits for Capture and Control Device

**Comment:** Section 63.846(g)(2) of the proposed rule (parameter operating ranges for control devices) requires the owner or operator of a paste production plant to specify parameters to be monitored and operating limits for the capture and control devices in the part 70 permit application. Commenter IV-D-7 asks for clarification of what constitutes an operating limit for a capture device.

**Response:** This provision will be clarified to indicate that parametric monitoring is required for the control device only and is not required for the capture system.

### 2.6.16 Clarification of Exceedance

**Comment:** Commenter IV-D-14 asks EPA to clarify that the rule applies to exceedances per emission control device for each parameter that is required to be monitored. Commenter IV-D-7 asks for clarification of the term "exceedance" in that: (1) when each module on a scrubber is equipped with a detector, is each detector on the module allowed six excursions or are all monitors on a device counted as one (2) over what period of time are the six exceedances counted (3) does an instantaneous clog or surge constitute an exceedance?

**Response:** Exceedances are counted for each parameter monitored for the emission control system associated with a given potline. For example, any exceedance of the flow rate of alumina for the control equipment associated with a single potline counts toward the limit of six in a semiannual period, even if there are multiple dry scrubbers on the potline or if there are multiple monitors for alumina flow for the potline's control device(s). An instantaneous clog or surge, if it results in a reading outside of the limits established for the monitored parameter, is counted. However, note that multiple exceedances associated with

a single parameter for a given control device are counted toward the limit of six only once per day. For example, if problems with alumina flow to a specific control device are experienced periodically throughout the day until the problem is corrected, the difficulties are counted as only one exceedance of the operating parameter limits for that day.

### 2.6.17 Time Limit for Initiation of Corrective Action

**Comment:** Commenter IV-D-4 believes the corrective action provisions in the proposed rule should allow 8 hours for the initiation of corrective action for startups, shutdowns, and malfunctions rather than 1 hour. Commenter IV-D-6 does not believe 1 hour is sufficient for initiating corrective actions after exceeding control device operating parameters. Commenter IV-D-14 supports the provisions, provided that initiation of corrective action, as opposed to complete implementation of corrective action, is sufficient to demonstrate compliance.

**Response:** The EPA believes that 1 hour is sufficient time to initiate corrective actions, and this has been supported by several industry participants. Prompt initiation is important because of the potential for large quantities of uncontrolled emissions to occur when the control equipment is not operating.

### 2.6.18 Time Allowed for Initial Performance Test

**Comment:** Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 recommend that the time allotted for initial performance tests of potlines and anode bake furnaces be expanded to 6 months following the compliance date. The commenters do not believe the 1-month period is sufficient to complete initial testing and establish parametric operating ranges and is not reasonable for facilities with multiple control devices and for plants that must make significant modifications.

Commenter IV-D-10 asks that additional time be allowed for reporting the results of the initial performance test (120 days after the compliance date instead of 30 days). If the initial test is performed within 30 days of the compliance date, the additional time is needed to analyze samples and report the results from the simultaneous sampling during the month of multiple potroom roofs, primary control devices, and anode bake furnaces.

**Response:** The EPA believes that with a minor clarification to the rule, 1 month will provide sufficient time to perform the initial performance test because many plants are already sampling on a monthly basis. The rule as proposed implied that all emission control devices might need to be sampled during the first month following the compliance date. However, the intent was that tests conducted during the previous 12 months could be

used to determine the primary system's contribution to emissions, and that secondary (roof) emissions be sampled during the initial month and each month thereafter. Because most plants perform sampling of emission control devices at least annually, they would be able to use those results rather than conducting additional tests of the primary control system during the initial month. Consequently, the rule was clarified on this point, and with this change, the timing for emission testing should not pose the type of burden described by the commenters.

### 2.6.19 Site-Specific Test Plan

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 recommend that site-specific test plan provisions addressing procedures for rotating sampling among the scrubbers at plants with roof scrubbers under § 63.846(c)(5) and procedures for a VSS1 potline to ensure that one fan (or one scrubber) per potline is sampled for each run under paragraph (c)(6) allow the owner or operator, subject to approval of the applicable regulatory authority, to sample at one or more fixed locations to provide sampling flexibility.

**Response:** The EPA believes that such site-specific considerations and decisions be made by the applicable regulatory authority, who is in the best position to consider and evaluate site-specific factors. Note also that if a plant has received previous approval from the State for an alternative method for measuring TF (e.g., because of site-specific peculiarities), then § 63.849(e)(1) allows that procedure to be used for the MACT rule.

### 2.6.20 Daily Visual Inspections of Primary Control Systems

**Comment:** Commenter IV-D-3 agrees that visible emission observations may indicate a problem with a dry control system, but not for wet systems where water vapor is always present. The monitoring of operating parameters will detect abnormal operating conditions for wet systems. The commenter recommends wet systems be exempted from the requirement for daily visual inspections of exhaust stacks. Commenter IV-D-6 believes that daily inspections are imprecise and unreliable and may allow abnormal operation to continue undetected for prolonged periods. The commenter recommends continuous opacity monitoring to provide useful data for optimizing plant operation and to provide a timely and reliable indicator of abnormal operation.

**Response:** The promulgated rule establishes a procedure that quantifies visible emissions expected under normal conditions by performing visual observations during the time period that emission sampling is conducted that shows compliance with the emission limit. Future levels of visible emissions are compared to this initial level to identify periods of abnormal operation.

Method 9 explains how to observe visible emissions in the presence of water vapor. Note that the parametric monitoring would be performed more frequently than the simple daily visual inspection; consequently, the rule does not rely only on the visual inspection to ensure proper operation. The EPA considered continuous opacity monitors, but chose not to require them because of the high cost (e.g., numerous monitors would be required for plants that have multiple control devices with many stacks for a single potline) and because parametric monitoring of control device operation, supplemented by daily visual inspections, would provide a reasonably prompt indication if a control device was not working properly.

### 2.6.21 Determination of Compliance for Bake Furnaces

**Comment:** Commenter IV-D-6 believes that determining compliance on an annual basis using a total of three runs is insufficient because of normal variations in the anode manufacturing process.

**Response:** Annual sampling under representative conditions, when supplemented by frequent monitoring of the control device's operating parameters, was judged adequate to demonstrate compliance. If the control device is operating properly on a continuing basis, emissions are expected to be well controlled.

### 2.6.22 Monitored Parameters for Dry Scrubbers

**Comment:** Commenter IV-D-6 believes monitoring only **total** dry scrubber gas and alumina flow is insufficient to ensure high efficiency. The commenter states that it is necessary to monitor the alumina flow to **each** module to ensure high HF removal efficiencies are maintained, especially when an HF CEM is not used.

**Response:** The comment sounds reasonable, and apparently some plants monitor the alumina flow to each module. The EPA believes that this should be considered by the plants and applicable regulatory authority when the parametric monitoring approach is submitted by the companies and reviewed by the regulatory authority for approval or disapproval.

### 2.6.23 Modified Method 14 Manifold

**Comment:** Commenter IV-D-2 describes physical constrictions in the rooftop configuration of a plant that would not allow installation of Method 14 manifolds meeting the precise specifications required by the method. The facility will be converted from side-work to center-work prebake, and the roof scrubbers will remain in place but will not be operated. The commenter asks EPA to clarify in the preamble to the final rule that the wet roof scrubbers do not necessarily have to be

operating to entitle the plant to use methods that meet the intent of Method 14 sampling requirements and that the demonstrations of equivalency (simultaneous sampling using Method 14 and the alternative method) in § 63.847(d)(4) are not possible with such rooftop configurations.

**Response:** Site-specific factors such as those described by the commenter are left to the discretion of the applicable regulatory authority. In its request for an alternative, the facility should provide a description of the proposed alternative, an explanation of why the prescribed method cannot be followed, and a technical justification. If an approach has been previously approved by the regulatory authority for sampling for TF, then it is also approved for TF sampling for the MACT rule [see § 63.849(e)(1)].

### 2.6.24 Report Gaseous and Particulate Fluoride

**Comment:** Commenter IV-D-12 supports EPA's proposal to require affected facilities to report the split between particulate and gaseous fluoride from Method 13; however, such a provision was not included in the proposed rule, and he asks if this was an oversight.

**Response:** The EPA agrees that when such data are available, the facility should report the split between gaseous and particulate fluoride. This approach provides potentially useful additional information at no additional cost, and this provision has been added to the rule [see § 63.850(e)(4)(xv)].

### 2.6.25 Sampling Primary Control Systems

**Comment:** Commenter IV-D-10 asks that EPA make it clear that only one-twelfth of the control devices for each potline (not all of them) are to be sampled during the initial compliance test. The commenter proposes using the requirements for sampling primary control systems presented in § 63.846 (c)(1) through (c)(3) of the rule.

**Response:** The rule was clarified to indicate that the site-specific test plan must be followed for the initial compliance test and subsequent compliance tests. The test plan must include provisions, subject to the approval of the regulatory authority, to ensure representative sampling when there are multiple stacks or multiple control devices on a single source.

### 2.6.26 Clarification for Monitoring Devices

**Comment:** Commenter IV-D-10 asks that 63.846(g)(1) be clarified to indicate that the monitoring devices are those associated with emission control equipment.

**Response:** The EPA agrees with the comment and will make the clarification in the rule.

### 2.6.27 Paste Plant Monitoring

**Comment:** Commenter IV-D-10 asks why the paste plant monitoring requirements are in § 63.846(g)(2) and suggests they be put into § 63.846(g)(1).

**Response:** There are two different provisions for a reason. The requirements in § 63.846(g)(1) of the proposed rule establish the operating limits for potlines and bake furnaces from monitoring during performance tests. The requirements in § 63.846(g)(2) of the proposed rule are different because performance tests are not required for paste plants, and this section requires the owner or operator to establish the parameters to be monitored and the operating limits for paste plant control devices.

### 2.6.28 Clarification for Sampling Bake Furnaces

**Comment:** Commenter IV-D-10 suggests that § 63.847(c) be clarified to indicate that for a carbon baking system comprising single or multiple furnaces ducted to multiple control devices, each control system should be sampled (and put into the average) at least once each year.

**Response:** Unusual or site-specific situations must be addressed in the site-specific test plan. For sources vented to multiple control devices, the rule requires that the plan include procedures that ensure representative sampling to determine the emissions from the source, and the test plan must be reviewed and approved by the regulatory authority. For anode bake furnaces, the rule requires that the emission control performance of the source (i.e., the bake furnace) be determined at least once per year from at least three runs.

## 2.7 EMISSION AVERAGING

### 2.7.1 State's Option to Allow Averaging

**Comment:** Commenters IV-D-3 and IV-D-10 want EPA to require States to provide the alternative of emissions averaging to all plants rather than giving States the option to accept or reject the use of averaging to determine compliance.

**Response:** The final rule follows the precedent set in other rules (e.g., Hazardous Organic NESHAP or "HON") that leaves averaging to the discretion of the State that must implement and enforce the program. Consequently, this provision will not be changed.

### 2.7.2 Averaging HF Measurements

**Comment:** Commenter IV-D-10 requests that EPA allow the use of emission averaging when HF measurements are used as an approved alternative to TF measurements for determining compliance.

**Response:** The final rule allows emission averaging based on HF measurements if the HF measurement method has been approved as an alternative method under § 63.849(e)(2) by a State that allows averaging.

### 2.7.3 Allow to Modify Plan and Opt In and Out of Averaging

**Comment:** Commenter IV-D-10 asks that the rule be revised to (1) allow a facility to choose to use averaging at any time, even after the date of applicability of the rule; (2) allow a facility to back out of averaging if desired (after approval); and (3) provide for changes in the number of potlines used in averaging during the life of a permit. The commenter further states that the advance notice of the intent to use averaging should not be limited to only one opportunity, and also asks that there be the opportunity to add, subtract, and modify the method of averaging. Commenter IV-D-5 also asks that the rule be changed to allow a facility to modify its averaging plan.

**Response:** The EPA believes that the final rule as written allows these changes in § 63.846(d)(5), which permits the owner or operator to make a request to the regulatory authority to revise the emission averaging plan or to elect to use averaging after the compliance date. A minor clarification was made in § 63.846(d)(1) to indicate that the implementation plan must be submitted for regulatory authority approval 6 months before the facility intends to comply with the averaging limits rather than 6 months before the "applicable compliance date."

### 2.7.4 Test Results in Averaging Plan

**Comment:** Commenter IV-D-10 notes that an averaging plan must be submitted 6 months prior to the compliance date, and the plan must include the results of the initial performance test, which means that the sampling must be performed 6 to 9 months prior to the compliance date. The commenter suggests that the averaging plan include a test plan for sampling but not require the actual testing to be performed so far in advance. The averaging plan's contents, including the test plan, will provide enough information to make a determination about the averaging approach, and the actual test results would not be needed until the plan actually went into effect [the first month after the compliance date as stated in § 63.846(b)].

**Response:** The comment is reasonable, and appropriate revisions have been made in the final rule.

### 2.7.5 Derivation of HSS Limit

**Comment:** Commenter IV-D-3 believes there is inequity in how the emission averaging limits were determined for the HSS subcategory relative to other subcategories in that a reduced "z" statistic was applied.

**Response:** As explained in the Basis and Purpose document (Docket Item II-H-2), the derivation of the averaging approach was designed to be consistent with the emission limit for a single line and to ensure there would be no increase in emissions from averaging. The "z" statistic used for HSS (1.65 for the 95 percent level) was necessary to accomplish these goals. For example, another way of deriving an approximate "z" statistic for HSS is to calculate it from the mean (2.07), the standard deviation (0.36), and the single line limit (2.7) for the HSS MACT floor data set:

$$z = (2.7 - 2.07)/(0.36) = 1.75.$$

If this value of 1.75 were used instead of the value for the 95 percent level (1.65), the calculated limits for averaging would be unchanged for the HSS subcategory. For this case, it would be inappropriate to use the value for the 99 percent level (2.33) because the higher averaging limits that would be calculated would not be consistent with the single line limit and could result in increased emissions from averaging.

## 2.8 TEST METHOD

### 2.8.1 Alcan Cassette Monitoring Alternative

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-7, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 state that the Alcan cassette monitoring method should be included as an approved method to determine compliance for emission monitoring under § 63.848(a) of the final rule, as it is approved for demonstrating similar potlines under § 63.847(d). The final rule should also allow the monitor to be used in developing correlations of emissions for alternative monitoring devices, such as the HF continuous emission monitor. Commenter IV-D-14 believes that the Alcan cassette system should not be listed under § 63.847(d) since it is a preapproved monitoring procedure. Commenter IV-D-12 asks for the results of the investigation of the use of Alcan cassettes as an alternative to Methods 13 and 14, including information on accuracy, precision, and any biases.

**Response:** The EPA has approved the Alcan cassette method as an alternative to Method 14, and, as discussed in the proposal

preamble, has included the method (identified as Method 14A) in the final rule. Numerous comments were received supporting the method, and no comments were received that were opposed to the method as an alternative to Methods 13 and 14. An alternative employing this sampling technique had been previously approved for sampling and analysis of TF at one facility for the NSPS. Evaluation of data from comparison testing confirmed it to be an acceptable alternative. The data have been placed in the docket.

### 2.8.2 Previously Approved Alternative Methods

**Comment:** Commenters IV-D-7 and IV-D-10 recommend that all other previously approved alternative TF sampling methods should be included in the rule and allowed for compliance demonstrations and demonstration of similar potlines with no requirements for comparison tests. These include the Alcan cassette method, HF CEM, and other previously approved methods: Alcoa Methods 4075A-TF and 4076-TF (approved August 8, 1996) and Alcoa Methods 4075A, 4076A, 913A, 914E, and 914F (approved December 18, 1978).

**Response:** The final rule allows the use of previously approved methods (e.g., the Alcoa methods cited in the comment) in § 63.849(e)(1), and as discussed earlier, Method 14A for compliance demonstrations and demonstration of similar potlines. However, the HF CEM has not been approved as an alternative for sampling for TF because it does not measure TF directly. However, the EPA expects that with additional development and comparative data that were not available at the time of proposal, the HF CEM could be a superior monitoring tool. Consequently, the rule allows the HF CEM to be used to monitor similar potlines, and the rule also contains a provision that would allow the owner or operator to demonstrate that it is an acceptable alternative to Methods 13 and 14 for compliance demonstration purposes.

### 2.8.3 Validation of Method 315

**Comment:** Commenter IV-D-12 asks how EPA validated Method 315 and what the results of this validation were (e.g., accuracy, precision, any biases or interferences).

**Response:** The data and other information used to develop Method 315 are provided in the rulemaking docket (Docket Number A-92-60).

### 2.8.4 Method 14 Criteria

**Comment:** Commenter IV-D-10 states that it will be difficult to show that an alternative method meets the criteria for Method 14 [63.847(d)(1)(ii)] and requests that EPA relax this requirement to encourage the development and use of CEMs that measure HF.

**Response:** The EPA does not believe that it will be difficult for HF CEMs to meet Method 14 criteria. These criteria include the requirements to install anemometers to determine the volumetric flow rate and to require that the manifold cover 35 meters or 8 percent of the cells in the potroom, whichever is greater.

### 2.8.5 Sampling Time for Method 315

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 request that a specific minimum sampling time be specified in section 8.1.2.4 of proposed Method 315. They mention that at the emission test for the MACT floor facility, an 8-hour sampling period was used to measure POM from bake furnaces by Method 315 while potroom roofs included sampling for 24 hours. They also ask that a provision be included to allow flexibility in sampling time to account for site-specific variations.

**Response:** The EPA agrees and has clarified that a minimum sampling time of 8 hours be used for sampling primary control devices (potlines and bake furnaces), and that a period that covers an operating cycle (typically 24 hours) be used for potline fugitive or secondary emissions, unless site-specific factors dictate an alternative sampling time. The alternative sampling time would be subject to the approval of the regulatory authority.

### 2.8.6 Use of Grease for Sampling Train Components

**Comment:** Commenter IV-D-5 notes that the proposed method should state that the use of grease for sealing sampling train components is not recommended because most greases are soluble in methylene chloride; the use of grease also increases the possibility of sample contamination.

**Response:** The EPA agrees and has incorporated this change into the method.

### 2.8.7 Dioctyl Phthalate (DOP) Test

**Comment:** Commenter IV-D-7 asks EPA to identify laboratories offering the DOP test cited in proposed Method 315 as a means to evaluate filters. The commenter has not been able to locate a laboratory offering this test.

**Response:** Method 315 allows test data from the filter supplier's quality control program to be used to meet this requirement. Suppliers of the glass fiber filter are probably the source most familiar with the test, and it would probably save time and money just to request certification from the filter supplier.

### 2.8.8 Teflon Alternative

**Comment:** Commenter IV-D-3 recommends that section 6.2.1 allow Teflon™ bristle brushes.

**Response:** The EPA agrees and has incorporated this change into the method.

### 2.8.9 Tetrafluoroethylene (TFE) Wash Bottles

**Comment:** Commenter IV-D-3 recommends that section 6.2.2 allow TFE wash bottles.

**Response:** The EPA agrees and has incorporated this change into the method.

### 2.8.10 Replace the Term "Allihin Tubes"

**Comment:** Commenter IV-D-11 notes that laboratory suppliers no longer use the term "Allihin tube" and that Method 315 should be revised to use the term "Buchner fritted funnel" instead.

**Response:** The EPA agrees and has incorporated this change into the method.

### 2.8.11 Speciated POM Data

**Comment:** Commenter IV-D-6 notes that Method 315 will yield data only indirectly related to POM. Given the small number of measurements required annually, EPA should require quantification of speciated POM emissions.

**Response:** Method 315 is used because the emission control performance limits developed for POM emissions were based on testing using Method 315. The use of this method represents significant cost savings over the speciation of each compound, which in turn provides more opportunities to ensure compliance with the POM limits.

### 2.8.12 Method 315 for Primary Aluminum Plants Only

**Comment:** Commenter IV-D-1 asks that EPA clarify that Method 315 applies only to the primary aluminum industry. The commenter cites concern about the lack of clarity in the definition of POM and that the method may not be appropriate for other industries. For example, methylene chloride is an excellent solvent for many organic compounds that are not POM.

**Response:** The EPA agrees that methylene chloride is an excellent solvent for many organic compounds other than POM. The method currently applies only to the primary aluminum industry. However, it is possible that the method could be proposed for use

in other rulemakings. The affected industry should comment on its applicability during development of these other rulemakings.

## 2.9 COSTS AND ECONOMICS

### 2.9.1 Economic Impact Analysis

**Comment:** Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-7, IV-D-8, IV-D-10, IV-D-10, and IV-D-13 contend the capital costs of the proposed rule are higher than the EPA's estimates. The commenters ask that the estimates presented at promulgation be revised to incorporate their higher estimates of cost.

**Response:** The promulgation preamble acknowledges that the industry's estimates of costs are higher than those developed by EPA. However, the preamble also explains some of the reasons for the differences and provides some examples of why EPA believes that some of the industry's estimates are overstated.

### 2.9.2 Emission Control and Monitoring Costs

**Comment:** Commenter IV-D-7 believes the emission control and monitoring cost estimates are low for his plant and submits additional cost information. At his plant, up to seven additional full-time employees may be needed to ensure environmental compliance, including labor for operation, maintenance, monitoring instrumentation, and corrective action. The actual final cost will depend on the degree to which manual methods can be automated and the extent to which CEMs can be used. This commenter also asks which monitoring scenario was used for costing (e.g., one Method 14 manifold per potline in a potroom that is representative of the entire potline or one manifold per potroom).

**Response:** This commenter submitted sufficient detailed cost information to compare the company's capital cost estimate of $9.9 million to EPA's estimate. The EPA estimate of the capital cost of emission control and monitoring for this plant was $8 million, which is within 20 percent of the company estimate. Cost estimates that are within 20 percent are generally considered quite good.

The monitoring costs are based on monitoring each potline (as the rule requires) and are not based on monitoring each potroom. The EPA's estimates of the costs of monitoring assume that a portion of the plants will use low-cost options, such as HF CEMs; others will use the Alcan cassette method because it offers cost advantages over Method 14; and others will use the more costly option of installing a Method 14 manifold and using EPA Methods 13 and 14. However, the final rule offers great flexibility that can be used to reduce the cost of monitoring,

including the HF CEM for similar potlines and provisions for qualifying for reducing the sampling frequency.

## 2.10 REPORTING AND RECORDKEEPING

### 2.10.1 Notifications

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 suggest changes to the notification provisions in § 63.849(a) of the proposed rule: (1) references to the NESHAP General Provisions requirements for notification of special compliance obligations and compliance status should be deleted; and (2) the reference to the notification for use of a CEM should be clarified as a one-time notification of the intent to use an HF CEM.

**Response:** The rule was clarified to state that the notification to use an HF CEM was a one-time notification per affected source. The notification of special compliance obligations was deleted because it does not apply to this rule. Other notification requirements were retained because they are necessary for the regulatory authority to implement the rule.

### 2.10.2 Engineering Plan

**Comment:** Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 believe EPA should revise or delete the requirement for an engineering plan describing techniques to be used to address capture efficiency (upon request of applicable regulatory authority) as part of the notification of compliance status. If the provision is not deleted, Commenter IV-D-13 suggests revisions to require a design factor rather than addressing work practices. Commenter IV-D-12 supports requiring an engineering plan that describes the techniques that will be used to address the capture efficiency of the reduction cells for gaseous HAPs in compliance with the emission limits in the rule.

**Response:** The EPA believes that the engineering plan (at the option of the regulatory authority) is appropriate and plans no changes from the proposal. The plan is no great burden to the industry to prepare, it is required only if the State requests it, and it provides valuable information to the State in terms of how a facility plans to improve control of gaseous fluoride or HF emissions. It is also an opportunity for the industry to demonstrate to the State that it is reducing HF emissions to meet the TF emission limits.

### 2.10.3 Revisions to Startup, Shutdown, and Malfunction Plans

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-5, IV-D-7, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 suggest that the provisions for the startup, shutdown, and malfunction plan be revised to allow

modifications to the plan by the owner or operator, as approved by the applicable regulatory authority.

**Response:** The General Provisions allow the plan to be revised; consequently, there is no need to put such a provision in the MACT rule. Moreover, the General Provisions do not require submitting the plan to the regulatory authority for approval. The only additional requirement in the General Provisions is that if the plan is revised, the previous (superseded) version must be kept and made available (at the request of the regulatory authority) for a period of 5 years after the revision [§ 63.6(e)(3)(v)].

### 2.10.4 General Provisions Recordkeeping Requirements

**Comment:** Commenter IV-D-7 believes incorporating the General Provisions notification requirements in the subpart is a welcome improvement and recommends incorporating the General Provisions recordkeeping requirements as well.

**Response:** The EPA believes that the recordkeeping requirements in the final rule should focus only on those that are unique to the rule and are not required by the General Provisions.

## 2.11 WORDING OF REGULATION AND CLARIFICATIONS

### 2.11.1 Updated Company Title

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-7, IV-D-8, IV-D-10, and IV-D-13 request that in the definition of the "vertical stud Soderberg one (VSS1) subcategory, "Columbia Aluminum" be replaced by "Goldendale Aluminum Company."

**Response:** This correction has been made in the final rule.

### 2.11.2 Equation Number Correction

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, and IV-D-13 note that under § 63.846(e), the rule incorrectly cites the first equation as Equation 2.

**Response:** This correction has been made in the final rule.

### 2.11.3 Equation 2 Clarification

**Comment:** Commenter IV-D-3 believes the definition of $Q_{sd}$ in Equation 2 should be clarified by adding "corresponding to appropriate subscript locations." Commenter IV-D-10 states that $C_{s1}$, $C_{s2}$, $Q_{s1}$, and $Q_{s2}$ are not defined.

**Response:** The equation has been clarified as suggested. However, $C_{s1}$, $C_{s2}$,$Q_{s1}$,and $Q_{s2}$ are defined in the rule, and this equation has been used for several years without confusion in the NSPS.

### 2.11.4 State MACT Determination

**Comment:** Commenter IV-D-7 asks that the facility subject to a State MACT determination be identified by name in the rule and the control system and emission limits of the determination be discussed. The commenter specifically asks if the facility has a paste plant.

**Response:** The provision is a general one relating to offsite bake furnaces; therefore, it was not necessary to identify the furnace operated by Reynolds Metals in Louisiana as the one impacted by State MACT determination. This plant also operates a paste plant; however, the paste plant is subject to the MACT standard for paste production plants.

### 2.11.5 Use of "Source" in § 63.849(c)

**Comment:** Commenter IV-D-7 believes the word "source" is not used correctly in the startup, shutdown, malfunction plan provisions in the rule in that this could be interpreted to include emission units not affected by the NESHAP. The provisions also should clarify that potlines rather than individual pots are the focus of the reports.

**Response:** The EPA believes that the word "source" is used appropriately in this section and means each potline, anode bake furnace, and paste production plant [these are the affected sources as provided in § 63.840(a)]. In addition, since the potline is the affected source and not an individual pot, there should be no confusion that the provisions apply to the potline rather than to individual pots.

### 2.11.6 Clarification of Wording for Similar Potlines

**Comment:** Commenter IV-D-3 suggests improved wording to clarify that § 63.847(d) requires reference method emission testing on one potline to represent similar potlines, but approved alternative methods could be used on the other potlines. Commenter IV-D-10 suggests that § 63.847(d)(1) be clarified to indicate that parallel sampling is required for only one of the similar potlines and is not required for all similar potlines. In addition, the commenter requests clarification that the other similar potlines are to be monitored by the alternative monitoring procedure.

**Response:** This clarification has been made in the final rule.

### 2.11.7 Definition of Reconstruction - Potline Conversions

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 point to the preamble discussion that a Soderberg potline conversion to a prebake potline is expected to subject the source to existing prebake potline emission limits, rather than triggering new source MACT, and asks that this language be incorporated into the definition of reconstruction in the final rule. Commenter IV-D-11 agrees and adds that the definition also should note that other types of conversions, such as conversion of a side-worked prebake to a center-worked prebake, also would not trigger new source MACT. This commenter believes EPA should add a statement to the definition that the NESHAP definition supersedes all other rules.

**Response:** The EPA believes that the definition of "reconstruction" in the final rule is adequate as written. While the conversion of a potline is not expected to trigger new source MACT, it is possible if the facility is rebuilt entirely. The EPA disagrees that the definition of "reconstruction" in this standard should supersede the definition used in any other rules.

### 2.11.8 Definition of Reconstruction - Electrical System

**Comment:** Commenter IV-D-7 asks for clarification of electricity handling equipment, a component of the raw materials handling system (cited in the definition of reconstruction). Would increased rectification capacity trigger modification, reconstruction, or new source review?

**Response:** Such a change by itself would not trigger new source MACT under this rule. If the change results in an increase in TF emissions from a potroom group, the change may trigger the NSPS provisions that were incorporated into the rule.

### 2.11.9 Clarification of Reconstruction

**Comment:** Commenter IV-D-12 asks for clarification of the meaning of the phrase "technically and economically feasible" when determining if a source is reconstructed and subject to new source MACT and also asks who makes this determination.

**Response:** Whether an action is "technically and economically feasible" is based on the judgement of the applicable regulatory authority, usually the State agency, and on the site-specific information submitted to the authority by the facility. This language is exactly the same as that used for many years in the General Provisions to part 60; consequently, the regulatory authority would be expected to use the same criteria as that used in the past for NSPS.

### 2.11.10 Definition of Subcategories

**Comment:** Commenter IV-D-12 states that by identifying specific facilities and owners in certain definitions (CWPB2, CWPB3, VSS1, and VSS2) problems are created when a facility changes owners or converts from Soderberg to prebake technology.

**Response:** The plant names used in the definition are those for existing potlines (i.e., the names are those at the time of promulgation); consequently, if the name or ownership subsequently changes, the rule definition would still apply in terms of their names as existed at promulgation. There should be no confusion about which limits apply if a potline changes subcategories. The rule requires that in this case, the converted potline must meet the limits for the previous or new subcategory, whichever is more stringent.

### 2.11.11 Additional Definitions

**Comment:** Commenter IV-D-12 asks that the definition of "prebake process" be clarify to read: "...means a method of primary aluminum reduction that utilizes an anode baked in a bake oven, which is introduced..." The commenter also requests that the following terms be defined: operating cycle for the anode bake furnace, primary control system, primary emissions, and secondary emissions.

**Response:** These changes have been made to the final rule.

### 2.11.12 Delegation of Authority

**Comment:** Commenter IV-D-12 asks that the delegation of authority (§ 63.851) be simplified to say that all implementation and enforcement authorities necessary to carry out this subpart are delegated to the States and none are retained by the Administrator.

**Response:** This clarification has been made to the final rule.

### 2.11.13 Clarification of Sampling Requirements

**Comment:** Commenter IV-D-12 asks that § 63.845(b)(2) be clarified by inserting the bolded words: "...determine the monthly average emissions (in lb/ton) from **each** potline from at least three runs **per potline** each month for TF..."; that § 63.846(d)(1) be clarified to indicate whether the three runs apply to the primary system, the secondary system, or both; and that § 63.847(a) specify the duration or operating cycle for each of the three runs of the secondary system.

**Response:** The EPA agrees to make these clarifications.

## 2.12 MISCELLANEOUS

### 2.12.1 Health Effects

**Comment:** According to Commenters IV-D-2, IV-D-4, IV-D-7, IV-D-8, IV-D-10, IV-D-10, and IV-D-13, the preamble to the final rule should clarify that fluorides are a welfare pollutant and do not pose a human health risk at the levels emitted from aluminum plants. Commenter IV-D-7 believes the discussion of health effects is of no value without associated exposure levels and durations and the information provided conflicts with EPA conclusions published in previous documents.

**Response:** The discussion of health effects in the preamble was provided only as background information and was not a consideration in determining the MACT floor. The discussion is relevant because HF is a listed HAP. Residual risks and residual adverse health effects, if any, are to be addressed under a separate rulemaking.

### 2.12.2 Regulatory Authority Approval of Extension

**Comment:** Commenters IV-D-2, IV-D-3, IV-D-4, IV-D-8, IV-D-10, IV-D-13, and IV-D-14 recommend that the final rule allow 3 years to demonstrate compliance without approval of the regulatory authority. Commenter IV-D-14 urges EPA to acknowledge that the definition of control equipment includes items such as hooding, cranes for anode changes, etc. Several commenters believe that many facilities will require an additional year extension available under section 112(b); Commenter IV-D-3 also requests that additional time beyond the 3-year period be allowed for sources that have been idled for an extended time period.

**Response:** The EPA does not see the need to grant all plants 3 years to comply when many will be able to comply easily within the 2-year period. In addition, it is appropriate for the applicable regulatory authority or State to determine if additional time is needed based on site-specific factors, including a decision whether some of the cited equipment is primarily for emission control to comply with the standard, routine maintenance, or capital improvements to the production operation.

### 2.12.3 Administrative Changes to Operating Permits

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-7, IV-D-8, IV-D-10, and IV-D-13 suggest that the final rule state that applications, requests, submissions, or plan revisions should be considered administrative permit changes and not permit modifications. Examples include submission and approval of the implementation plan for emission averaging [§ 63.845(d)], a request to implement averaging after the applicable compliance

date [§ 63.845(d)(5)(iii)], a request to redetermine parameter operating limits for control devices [§ 63.846(g)(3)], and demonstration of good emission performance for less frequent monitoring as in the NSPS [a suggested addition to § 63.847(e)]. These submissions should not require Title V permit review. Commenter IV-D-7 also asks for clarification of whether the rule allows reduced sampling without a permit modification as required under 40 CFR 70.7(e)(4)(i).

**Response:** The EPA determined that it is not appropriate to specify within the NESHAP whether changes to permits should be considered administrative in nature or as permit modifications. This is accomplished more directly through the permit writer, who can incorporate the alternatives allowed by the NESHAP into the permit. By adding the NESHAP provisions to the permit, the flexibility allowed by the NESHAP is maintained with respect to implementation of emission averaging and other provisions. In addition, the source may suggest to the permit writer that certain flexible provisions are important to the source based on the compliance approach that the source anticipates implementing.

### 2.12.4 Time Limit for Review/Approval

**Comment:** Commenters IV-D-2, IV-D-4, IV-D-5, IV-D-7, IV-D-8, and IV-D-13 recommend that the final rule include a 30-day limit for regulatory authority review, approval, and/or action on submissions. Examples include the implementation plan, an application to change control device parameter operating limits, and requests to modify the startup, shutdown, and malfunction plan or the emission averaging plan (suggested additions to the rule). According to the commenters, each submission should be given automatic approval if no action or response is taken by the applicable regulatory authority within 30 days of receipt. Commenter IV-D-10 also notes that there is no time limit for the regulatory authority to act on a request to change the limits for parametric monitoring [in § 63.846(g)(3)] and suggests that the limit be 120 days after receipt of the request, that the request be automatically approved if no action is taken, and that such requests be considered administrative changes to the operating permit. Commenter IV-D-10 asks that § 63.847(d)(5) be revised to indicate that the regulatory authority should approve the request for alternative monitoring of similar potlines within 180 days.

**Response:** The proposed rule contained provisions for a time limit of 120 days for regulatory approval or disapproval of the implementation plan for emission averaging, and this provision was kept in the final rule. In addition, the General Provisions allow the owner or operator to revise the startup, shutdown, and malfunction plan without submitting it for approval. With respect to other submissions, the rule was revised to indicate that the regulatory authority will approve or disapprove the

submissions within 60 days of receipt of all information needed to deem the submission complete.

### 2.12.5 Effect of Creditable Evidence Rule

**Comment**: One commenter, IV-D-4, believes that the creditable evidence rule will have a negative effect on the perfection and adoption of CEM in primary aluminum facilities. The commenter asks EPA to reconsider the creditable evidence rule.

**Response**: This comment should be submitted to the appropriate office involved with the creditable evidence rule.

### 2.12.6 Docket Addition

**Comment**: Commenter IV-D-5 notes that the docket does not include all correspondence from D. Ryan or the POM data collected by the commenter and EPA in 1995. Although the data were suspect and not used in the development of the rule, EPA should include the correspondence in the docket to acknowledge the existence of the data and the sampling effort.

**Response**: The data were not placed in the docket because the samples were not collected by standard methods, the ventilation rates were not measured when the samples were taken, and in general the results could not be validated. Consequently, they could not be used in the rulemaking. However, additional measurements performed for this plant using standard methods have been made and will be placed in the docket when they are received.

### 2.12.7 State Approval of Alternative Methods

**Comment**: Commenter IV-D-7 states that EPA should not limit delegation of authority to Washington State for approval of alternative test methods as is currently done for NSPS methods. He encourages EPA to delegate to the State the authority to approve alternative test methods.

**Response**: The rule allows the regulatory authority (i.e., the State agency) to approve alternative methods [see § 63.849(e)].

### 2.12.8 Estimate Sulfur Dioxide ($SO_2$) Reduction Benefits

**Comment**: Commenter IV-D-3 suggests that the environmental impacts should include the benefit of $SO_2$ emission reductions that would be achieved by facilities employing wet primary emission control systems.

**Response:** The primary purpose of the NESHAP in part 63 is to control HAP emissions, and $SO_2$ is not a HAP. The EPA acknowledges that facilities with wet primary control systems achieve control of $SO_2$ emissions that are not controlled at facilities with dry alumina scrubbers. However, $SO_2$ reductions are a secondary or incidental benefit, and the focus of the MACT standard and the MACT control technology is on the control of HAP. All of our available data indicate that the dry alumina scrubber is superior to wet primary control systems in reducing HAP emissions.