ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL-2661-3]

Standards of Performance for New Stationary Sources: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Plants

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Revisions to the standards of performance for electric arc furnaces (EAF's) in the steel industry and Reference Method 5D were proposed in the Federal Register on August 17, 1983 (48 FR 37338). This action promulgates the revisions to those standards of performance for EAF's that were proposed on October 21, 1974 (39 FR 37466) and Reference Method 5D. The revised standards apply to new, modified, and reconstructed EAF's and argon-oxygen decarburization (AOD) vessels for which construction was commenced after August 17, 1983. These standards implement Section 111 of the Clean Air Act and are based on a determination that EAF's and AOD vessels in steel plants cause or contribute significantly to air pollution which may be anticipated to endanger public health or welfare, The intended effect of these standards is to require all new, modified, and reconstructed EAF's and AOD vessels in steel plants to control emissions to the level achievable through use of the best demonstrated system of continuous emission reduction, considering costs, nonair quality health and environmental impacts, and energy requirements.

EFFECTIVE DATE: October 31, 1984.

Under section 307(b)(1) of the Clean Air Act, judicial review of this new source performance standard (NSPS) is available *only* by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Clean Air Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings initiated to enforce these requirements.

ADDRESSES: *Background Information Document.* The background information document (BID) for the promulgated standards may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777 Please refer to "Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Plants—Background Information for Promulgated Standards" (EPA-450/3-82-020b). The BID, Vol. II, contains (1) a summary of all the public comments made on the proposed amended standards along with the responses to the comments, and (2) a summary of the changes made to the standards since proposal.

Docket. Docket number A-79-33, containing information considered in development of the promulgated standards, is available for public inspection between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section (LE-131), West Tower Lobby, Gallery 1, 401 M Street, S.W., Washington, D.C. 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Doug Bell, Standards Development Branch, Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone (919) 541-5624).

SUPPLEMENTARY INFORMATION:

Background

On October 21, 1974 (39 FR 37466), standards of performance were proposed under Section 111 of the Clean Air Act to control particulate matter emissions from EAF's used in the steel industry. These standards of performance were promulgated on September 23, 1975 (40 FR 43850), and apply to any facility constructed, modified, or reconstructed after October 21, 1974. Under the Clean Air Act amendments of 1977, standards of performance must be reviewed every 4 years and revised if appropriate. On April 21, 1980, a notice was published in the Federal Register (45 FR 26910) announcing such a review of the standards of performance for EAF's in the steel industry. The review found that fugitive emissions capture technology had improved since promulgation of the original standards of performance for EAF's. The review also found that AOD vessels are a significant source of particulate matter emissions in specialty steel shops. As a result of these findings, it was determined that a revision of the standards was appropriate. Therefore, additional data were collected on the controlled emission levels from EAF's and AOD vessels to determine how the standards should be revised.

Revised standards and Reference Method 5D were proposed on August 17, 1983. These proposed standards would regulate particulate matter emissions from AOD vessels in addition to those from EAF's, and are applicable to facilities constructed, modified, or reconstructed after August 17, 1983. In addition, the proposed standards would establish more stringent fugitive visible emission standards for both EAF's and AOD vessels than are applicable in the current standards. The proposed standards would also allow the period monitoring of positive-pressure fabric filter control systems by visible emissions observers using Reference Method 9 in lieu of the existing continuous opacity monitoring requirements because a single transmissometer may not accurately measure the opacity of visible emissions from the multiple stacks or long monovents associated with positive-pressure fabric filters, and the cost of multiple monitors is considered to be unreasonable.

Positive-pressure fabric filters have become the predominant control device used to control emissions from EAF's. They usually have stub stacks, roof monitors, vents, or other exhaust configurations that do not provide the path length of undisturbed flow that is necessary for Method 5 testing. Therefore, Method 5D for measuring particulate matter emissions from positive-pressure fabric filters was added to Appendix A of the General Provisions in 40 CFR Part 60. This test method identifies appropriate locations and procedures for sampling emissions from positive-pressure fabric filters.

The Final Amendments

In response to public comments, certain changes have been made to the standards since proposal, and the more important of these changes are summarized below. The rationale for the changes is discussed in the Section entitled "Significant Comments and Changes to the Proposed Revision."

Section 272(a)(3)(iii) and related sections 274(a)(3), (a)(4), (b), (c), (e), and (f) (which are in the current standards but were not included in the proposed revised standards) are reinstated in the regulation for promulgation. Sections 274 (b) and (c) have been revised, and sections 274 (e) and (f) have been redesignated (f) and (g). These sections require that the flow rate through each capture hood and the pressure in the free space inside the furnace be continuously monitored and that the flow rate and pressure be maintained at levels established during the performance test. The visible emission standards apply during the establishment of these levels.

Modular, multiple-stack, negative-pressure fabric filters have been

included with positive-pressure fabric filters as control devices that may be monitored by Reference Method 9 observations in lieu of transmissometers.

Where it is possible to determine that visible emissions from multiple sites are attributable to a single incident of the visible emissions, sections 275(i) and 275a(c) have been revised to permit only one set of Reference Method 9 observations at the point of highest opacity that directly relates to the cause (or location) of the incident.

Several other changes have been made in the standards. Both Subparts AA and AAa are revised to permit either periodic monitoring and recording of fan motor amperage and damper position or continuous monitoring and periodic recording of flow rates through each separately ducted hood. In Subpart AA, if fan motor amperage/damper position monitoring is the chosen alternative, the monthly operational status inspections that were proposed will be required. Sections 275(a)(1) and 275a(a)(4) have been revised to make it clear that only Reference Method 5 is to be used on negative-pressure fabric filters and only Method 5D is to be used on positive-pressure fabric filters. A section on recordkeeping and reporting requirements has been added to Subpart AA. This section requires that when the "baseline" monitored values (i.e., pressure, fan motor amperage, or flow rate) are outside of acceptable ranges, these values must be reported semiannually. To be consistent with Subpart AA, Subpart AAa has been revised to require establishment of these same "baseline" values. Semiannual reporting of values outside of the specified ranges is also required for Subpart AAa. Both Subparts AA and AAa have had a provision added to clarify the requirements of acceptance by the Administrator in sections 275(g)(2) and 275a(h)(2). When utilizing a performance test method that compensates for the emissions from the facilities not subject to the provisions of the standards, the Administrator must be notified of the method to be used 30 days prior to the performance test and must approve the method.

Summary of Environmental, Energy, and Economic Impacts

There has been no change in the environmental, energy, and economic impacts since proposal. These impacts are discussed in detail in Chapters 7 and 8 of "Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Industry—Background Information for Proposed Revisions to Standards," (EPA–450/3–82–020a) (BID, Vol. I).

The standards recommended for promulgation would reduce nationwide particulate matter emissions from the carbon and specialty steel plants by about 960 tons per year for the industry in the fifth year following proposal of the standards. Because these emissions are collected as dry particulate matter, solid waste would increase by 960 tons per year in the fifth year following proposal. However, the dust from the fabric filters in specialty shops is generally recycled, and personnel in carbon steel shops are currently attempting to develop techniques for recycling their dust. The recommended standards would not cause any impacts on water quality. The nationwide energy consumption in the fifth year would not increase under the recommended standards.

There would be an increase in capital and annualized costs associated with the recommended standards. Because of changes in the fugitive emissions capture and monitoring requirements, the total capital costs of compliance with the NSPS would increase, at most, by $3,150,000 through the first 5 years following proposal of the standards. Similarly, total annualized costs in the fifth year would increase by no more than $479,000.

Public Participation

No public hearing was held. A hearing was requested but this request was later withdrawn. The public comment period extended from August 17, 1983, through October 21, 1983. Seven written comments were received. These comments represented one steel industry trade association, three steel companies, two government environmental agencies, and one individual. All comments were considered in developing the standards recommended for promulgation, and, where appropriate, changes have been made to the proposed revisions.

Responses to Comments on the Proposed Revisions

A detailed discussion of the comments that were received and the Agency's responses can be found in the BID for the promulgated revisions (Vol. II) that is referenced in the ADDRESSES section of this preamble. The summary of comments and responses in the BID, Vol. II, serves as the basis for the changes that have been made to the proposed revisions. The major comments and responses are summarized in this preamble under the following two headings: Test Methodolgy and Emission Limits.

Test Methodology

The majority of the public comments concerned the mass emission test methodology. Comments from the steel industry questioned the use of EPA Reference Methods 5 and 5D rather than high-volume sampling as the appropriate test method for measuring particulate matter emissions.

The NSPS are performance standards that are expressed in terms of mass emission rates. Determination of compliance with these standards requires accurate measurement of the pollutants for which these standards are set. For this reason, the EPA, in the General Provisions (40 CFR 60.8(e)), requires that all control devices be testable.

Positive-pressure fabric filters have historically presented a difficult test situation because of the complications involved in testing the many different configurations in which positive-pressure fabric filters occur. Some States have implemented the requirement that all control devices be testable by requiring affected facilities controlled with positive-pressure fabric filters to undertake the expensive retrofit of stacks or stack extensions onto the fabric filter for testing purposes. Other States have used various high-volume sampling techniques.

The EPA evaluated several approaches to testing positive-pressure fabric filters in an attempt to develop a test method that could be applied at reasonable cost and that was reliable and practical for these devices. High-volume sampling and Reference Method 5 sampling were among the approaches evaluated. The Agency conducted simultaneous comparison tests on a positive-pressure fabric filter using both Method 5 equipment and high-volume samplers. The data obtained from these tests show that the high-volume particulate concentration results were 70 to 85 percent lower than those indicated by the Method 5 equipment on emissions from the same positive-pressure fabric filter. Results of other comparisons between the two methods, both direct and indirect, also show that high-volume sampling methods produce results lower than Method 5 or Method 5D (docket entry IV–A–1).

The Agency has determined that it is necessary to use demonstrably reliable equipment and multipoint sampling to ensure a representative collection of particulate emissions from most emission sources, including fabric filters. Reference Method 5D incorporates the multipoint sampling requirements with

the use of reliable Method 5 equipment to provide a practical method for testing positive-pressure fabric filters. Method 5D is a modification of Method 5, which has proven reliable over many years of use. Method 5D incorporates the procedures of Method 5 and also prescribes procedures that make it practical for use on positive-pressure fabric filters. Method 5D is the method used to collect the data in support of the particulate emission standard.

The proposed provision that would allow the use of Reference Method 9 as an alternative to transmissometers for continuous monitoring of positive-pressure fabric filters is endorsed by the American Iron and Steel Institute (AISI). At the same time, the AISI believes that continuous monitors should not be required on modular, negative-pressure fabric filters that have multiple stacks because such fabric filters would also require multiple monitors, which would significantly increase the capital and operating costs. Therefore, the AISI recommends that Reference Method 9 be allowed on both modular, multiple-stack, negative-pressure fabric filters and positive-pressure fabric filters as an alternate method of continuous monitoring.

To respond to this comment, information was gathered (docket nos. IV-E-1, IV-E-2, and IV-E-3) about current installations and trends in the use of modular, multiple-stack, negative-pressure fabric filters. An industry trend toward positive-pressure fabric filters was confirmed.

It is unlikely that modular, multiple-stack, negative-pressure fabric filters will be used extensively by the industry; however, we are aware of three such fabric filters in use to control emissions from EAF's. The annualized costs of one transmissometer range from $8,000 to $13,000. To obtain accurate measurements on positive-pressure fabric filters, it would be necessary to install multiple transmissometers, and these additional costs are considered to be unreasonable. As is the case for positive-pressure fabric filters, the costs of installing multiple transmissometers to accurately measure visible emissions from this type of negative-pressure fabric filter would be expected to be unreasonable. Therefore, it is appropriate to permit Reference Method 9 visible emission observations by a certified observer in lieu of a transmissometer to monitor visible emissions from such units because, as for positive-pressure fabric filters, the costs are reasonable and the measurements are as accurate. Sections 273(c), 275(i), 273a(c), and 275a(c) of the regulations have been changed to reflect this position.

In a broader context, several comments were received questioning the accuracy and reliability of using Reference Method 9 to measure the opacity of fugitive emissions. In addition, several comments suggested that a shop roof mass emission standard would be more appropriate than a shop roof visible emission standard.

The "EPA Response to Remand Ordered by U.S. Court of Appeals for the District of Columbia in Portland Cement Association v. Ruckelshaus (486 F.2d 375, June 29, 1973)" discusses in detail the reliability and accuracy of Reference Method 9 and accompanying certification techniques for determining compliance with visible emission standards. On the basis of this response, the visible emission standard included in the NSPS for portland cement plants was affirmed by the Court on appeal in *Portland Cement Association* v. *Train,* 513 F.2d 506 (1975). The data gathered in responding to the remand for portland cement plants convincingly demonstrate that individual visible emission observers can, for single runs, read the opacity of visible emissions within an acceptable level of precision. The accuracy of the Method is taken into account in the enforcement process, as provided explicitly by Reference Method 9.

Furthermore, Reference Method 9, Section 2.3, specifies that opacity observations must be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. The plumes that results from fugitive emissions from the dust-handling equipment associated with EAF's in the steel industry would not be expected to contain condensed water vapor because the temperatures of such plumes are typically about 120° to 130°F Thus, there should be no difficulty in determining at what point in the visible fugitive emission plume the opacity should be read because a certified observer only needs to look for the point of greatest opacity.

The Agency had determined that the use of visible emission standards is technically sound and provides the most practical and inexpensive means to ensure that affected facilities are properly maintained and operated. The opacity of visible emissions exiting the shop roof monitor is a good indicator of the performance of the process and fugitive emissions capture systems. Therefore, shop roof visible emission opacity limits were selected as the format for this standard. Practical methodology does not exist to obtain measurements of mass emissions discharged from shop roof monitors of EAF facilities because the emissions are intermittent and highly variable, both in length of time and mass rate. Therefore, a mass emission limit for fugitive emissions from the shop roof is not consistent with the requirements of the Clean Air Act.

One commenter pointed out that, in some cases, it could be necessary to perform three Reference Method 9 opacity observations for each source of visible emissions from a fabric filter to comply with 40 CFR 60.275a(c). The commenter cites an example: a positive-pressure fabric filter with 32 compartments, each of which is discharged into a common outlet plenum that is open to the atmosphere at each end of the fabric filter. In addition, a horizontal slot is located on the front, bottom side of each compartment. Thus, visible emissions resulting from a broken bag in any one compartment could be seen at three locations. Thus, the commenter concludes that section 275a(c) would require 54 minutes of Reference Method 9 observations for the one incident.

It is not the Agency's intent to create unnecessary work for owners or operators of affected facilities. Thus, sections 275(i) and 275a(c) have been revised to make it clear that, where it is possible to determine that visible emission at multiple sites are attributable to only one incident of the visible emissions, one set of Reference Method 9 observations from the point of highest opactiy that directly relates to the cause (or location) of the incident will be sufficient.

Emission Limits

Several Commenters questioned why the mass emission standard had not been lowered when revising the standards.

Except for one test run at one facility, the data collected during the revision of this standard demonstrated that fabric filters on EAF's can achieve an emission level of less than 0.0031 grains per dry standard cubic foot (gr/dscf). However, the Agency has determined that the mass standard should not be lowered. This is because it was determined that, to guarantee fabric filter compliance with a 0.0031 gr/dscf standard, vendors might increase capital costs of fabric filters as much as 25 percent (docket Nos. II-E-56, II-E-57, II-E-58, II-E-60). This increase in costs would result from the increased air-to-cloth ratio and other design factors needed to ensure continuous compliance with a more stringent emission limit. Thus, the

incremental cost effectiveness of the more stringent standard would be as much as $8,000/ton, which is considered to be unreasonable.

According to the Clean Air Act Amendments of 1977, section 111(a)(1), a standard of performance shall reflect "application of the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." The 0.0052 gr/dscf limit is based on the data available from well-controlled and -operated facilities, and it takes into account the costs of complying with the standards.

Several comments were received concerning the level of the standard for visible emissions from the shop roof monitor. Two commenters believed the visible emission standard should be lower, and one commenter believed the standard should be higher.

By setting the level of the standard to include all the data acquired during entire heat cycles, achievability of the standards is ensured during normal operation of the steelmaking process. As was explained in the proposal preamble (48 FR 37347), the visible emission limits were selected based on the performance of the capture and control technologies that served as the basis for Regulatory Alternative B (partially open roof monitor). Regulatory Alernative C (closed roof) was not considered suitable as the basis for national standards of performance because it is based on a closed roof configuration which may aggravate worker and equipment heat stress problems. Operating experience with this roof configuration is limited in areas of the country where ambient temperatures and humidity are high. Because the effects of heat stress cannot be fully evaluated at this time, Regulatory Alternative B was selected as the basis for the proposed revised standards.

Twenty-seven hours of opacity observations were made of shop roof monitor visible emissions at two shops that utilized the capture systems upon which Regulatory Alternative B is based. The maximum opacity observed during these 27 hours was 5 percent. Visible emission limits for NSPS are based on achieved levels at well-operated and -maintained facilities that have installed what is considered to be the best demonstrated control technology. Thus, the visible emission level for this industry was set at 6 percent, which includes the highest Reference Method 9 observation plus a reasonable margin of safety. this methodology was approved by the Court in *Portland Cement* v. *Train, supra.*

The AISI pointed out that, although the data base for the control configuration recommended for the NSPS contains tests at two facilities (Plants J and N) that "are representative of the suggested technology (closed roof monitors over furnace only)" [Regulatory Alternative B], only 7 hours of Reference Method 9 observations were obtained during the charging and tapping portions of the heat cycle. The AISI believes these are insufficient data upon which to base a continuous 6 percent visible emission shop roof standard. The AISI recommends continuing to allow exceptions to the standard during charging and tapping.

The Agency has concluded that the 27 hours of Method 9 visible emission data acquired during the entire heat cycle at representative plants provide, in the Agency's judgment, an adequate data base upon which to set a standard. *National Lime Association* v. *EPA*, 627 F.2d 416 (D.C. Cir. 1980), which is cited in one comment, does require that the data be from representative facilities and that the standard be achievable; however, the Court did not specify any quantity of data that must be acquired before a standard can be set, and the Agency believes that the data are sufficient to demonstrate the achievability of the standard because worst-case conditions (i.e., dirty scrap as charging material) for this industry were included in the test program. The questions of achievability of the standard and limited data were raised by the AISI at the National Air Pollution Control Techniques Advisory Committee meeting in July 1982, prior to proposal of the revised standards. In response to these concerns, Plant N was visited and tested. Even during furnace upset conditions, when the fugitive emission capture system was receiving furnace process emissions at a rate estimated to be almost 10 times higher than it would during normal furnace operation, Plant N achieved the standard. The maximum 6-minute average visible emission reading over a 2-day period that covered many entire heat cycles was 3.3 percent. All of the data for Alternative B demonstrate that the visible emission limit of 6 percent opacity is achievable.

As noted earlier, Alternative B was recommended because the effects of heat stress on workers and equipment in closed roof shops in some areas of the country were unknown. The Agency did not want to risk causing any facility to incur problems with heat stress to achieve compliance with the standards. It was comments (docket entries II-D-67 and II-E-54) made by the AISI about possible heat stress problems in closed roof shops that persuaded the Agency to conclude that the standards should reflect the less stringent requirements of Regulatory Alternative B. As both the AISI and the Agency recognized, there were few partially open roof shops in existence, and, thus, only limited data could be acquired; however, these data are considered to be sufficient to set standards based on Regulatory Alternative B.

Because the 27 hours of data acquired during charging, melting, and tapping demonstrate that the 6 percent visible emission limit can be achieved with best demonstrated control technology, the Agency no longer believes that exceptions to the standard are appropriate for the charging and tapping portions of the EAF heat cycle.

The AISI stated in their comments that the deletion of section 272(a)(3)(iii) for sources built between October 21, 1974, and August 17, 1983, was not explained at proposal and is inappropriate. This subsection required compliance with the shop roof opacity standard only when the flow rate through each capture hood and the pressure in the free space inside the furnace were being measured during a performance test. The flow rates and pressure established at this time became "baseline." At all other times, these operating conditions were required to be maintained at the baseline values or better. The AISI stated that the deletion of this paragraph results in the imposition of a new and more stringent emission limit on shops built to comply with the original NSPS because these shops will now have to meet the shop opacity standards during all routine EAF operations. The AISI suggested that this is retroactive regulation of existing sources and exceeds the EPA's authority under section 111 of the Clean Air Act. The AISI recommended reinstatement of the paragraph.

The deletion of section 272(a)(3)(iii) from the standards is not considered to be more stringent regulation because the Agency believes that if the flow rate through each capture hood and the pressure in the free space inside the furnace are maintained at the levels established during the performance test, the affected facility will be in compliance with the visible emission standard. The deletion occurred because it was believed that not having to continuously monitor the flow rate and pressure would relieve some of the monitoring burden on owners or operators of affected facilities. The

Agency believes that deletion of this section is less expensive for, and more convenient to, owners or operators of the affected facilities. It was not the Agency's intention to make the standard more stringent; therefore, the proposed regulation has been amended. Section 272(a)(3)(iii) and related sections 274 (a)(3), (a)(4), (b), (c), (e), and (f) of the original regulation are reinstated. Sections 274 (b) and (c) have been revised, and sections 274 (e) and (f) have been redesignated (f) and (g). Therefore, sources built between October 21, 1974, and August 17, 1983, are required to continuously monitor, and maintain at baseline values, the flow rate through each capture hood and the pressure in the free space inside the furnace. Monitoring of fan motor amperage and damper position has been retained as an alternative to flow rate monitoring. The shop roof visible emission standard will apply during the most recent performance test.

Information Requirements Impacts

Three types of reporting would be associated with the proposed standards. First, there would be notification requirements, which would inform enforcement personnel of facilities subject to the standards. Second, there would be reporting of the results of performance tests that would be conducted to determine compliance with the standards. These reports are required by the General Provisions of 40 CFR Part 60, which apply to all standards of performance. Third, for Subparts AA and AAa, a report would be required of monitored values that occurred outside specified ranges, and for Subpart AAa, a report would be required to document exceedances of the control device opacity standards. This reporting would be required on a semiannual basis.

In addition, any owner or operator subject to the proposed standards would have to maintain the operating log of key operating parameters in a form suitable for inspection.

The Paperwork Reduction Act of 1980 (Pub. L. 96–511) requires that the Office of Management and Budget (OMB) approve reporting and recordkeeping requirements that qualify as an "information collection request" (ICR).

Information collection requirements associated with this regulation (those included in 40 CFR Part 60, Subparts AA and AAa) have been approved by the OMB under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3101 *et seq.*, and have been assigned OMB Control Number 2060–0038.

Based on the information collection requirements analysis, the resources needed by the industry, which includes facilities subject to existing NSPS (36) and new facilities (4 are estimated), to maintain records and to collect, prepare, and use the reports for the first 3 years would be about 10.3 person-years per year (includes one time and annual reporting and recordkeeping). The resources required by government agencies to process and maintain records for the first 3 years would be about 0.2 person-years per year.

Docket

The docket is an organized and complete file of all the information submitted to or otherwise considered in the development of this rulemaking. The principal purposes of the docket are: (1) To allow interested parties to readily identify and locate documents so that they can effectively participate in the rulemaking process; and (2) to serve as the record in case of judicial review, except for interagency review materials (Section 307(d)(7)(A)).

Regulatory Flexibility Analysis

The Regulatory Flexibility Act of 1980 (RFA) requires consideration of the impacts of proposed regulations on small businesses. The guidelines for conducting a regulatory flexibility analysis define a small business as "any business concern which is independently owned and operated and not dominant in its field as defined by the Small Business Administration Regulations under Section 3 of the Small Business Act." The Small Business Administration has determined that any firm classified in SIC 3312 (which includes carbon and specialty steel shops) that employs less than 1,000 workers will be considered small in regard to the Small Business Act.

Of the 87 firms that currently operate one or more EAF shops, employment and financial data are available for only 42. Of these 42, none employ fewer than 1,000 employees. It is likely, however, that some of the remaining 45 firms do qualify as small businesses. It is possible, therefore, that some small businesses could be affected by the standards.

If a substantial number of small businesses may be affected by a regulation, the RFA requires an analysis of whether these impacts are "significant." If any of the following four criteria are met, the impact of the regulation on a small business is considered significant.

Under the first criterion, the impact is judged to be significant if the regulation causes the average total cost of production to increase by 5 percent or more. The standards would not cause an increase in the average total cost of production as high as 5 percent. Thus, the potential impacts of the standards on small businesses are not significant from an average total cost standpoint.

The second criterion for significance relates compliance costs to sales for small versus large businesses. If compliance costs as a percent of sales for small businesses are at least 10 percent higher than compliance costs as a percent of sales for large businesses, the impact is judged to be significant. The total annualized cost of compliance as a percent of sales is much less than 10 percent greater for a small plant than for a large plant. The small business impact of the standards is not significant by this measure.

A third criterion to measure the significance of an impact on small businesses compares the capital cost of compliance with the capital available to small firms. It is difficult to determine how much capital is available to a firm. A reasonable approach is to recognize that the capital available to a small firm building a new plant with an EAF or AOD vessel at least equals the capital cost of the plant itself. The capital cost of compliance with the standards would be well under 1 percent of plant capital cost. Therefore, the capital costs of compliance do not represent a significant portion of capital available to small businesses.

The fourth criterion for significance is if the regulation is likely to result in closures of small businesses. The standards would not result in any closures of firms of any size.

There has been no change in the impact of the standards on small businesses since proposal. The promulgated standards, therefore, would not have a significant impact on small businesses. Thus, a regulatory flexibility analysis was not conducted.

Miscellaneous

The effective date of this regulation is October 31, 1984. Section 111 of the Clean Air Act provides that standards of performance or revisions thereof become effective upon promulgation and apply to affected facilities, construction or modification of which was commenced after the date of proposal (August 17, 1983).

As prescribed by section 111, establishment of standards of performance for this source category is based on the Administrator's determination that these sources contribute significantly to air pollution which may reasonably be anticipated to

endanger public health or welfare. In accordance with section 117 of the Act, publication of these promulgated standards was preceded by consultation with appropriate advisory committees, independent experts,and Federal departments and agencies.

This regulation will be reviewed 4 years from the date of promulgation as required by the Clean Air Act.

Section 317 of the Clean Air Act requires the Administrator to prepare an economic impact assessment for any new source standard of performance promulgated under section 111(b) of the Act. An economic impact assessment was prepared for the proposed regulations and for other regulatory alternatives. All aspects of the assessment were considered in the formulation of the proposed standards to ensure that the proposed standards would represent the best system of emission reduction considering costs. The economic impacts assessment is included in the BID, Vol. I. There have been no changes in the economic impacts assessment since proposal.

In addition to economics, the cost effectiveness of each regulatory alternative was evaluated in order to determine the least costly way to reduce emissions and to assure the controls required by this rule are reasonable relative to other particulate matter regulations. In this case, the standards of performance will result in a reduction of fugitive emissions of 45 and 78 tons per year per plant at typical specialty and carbon steel plants, respectively. The overall annualized costs for fugitive emissions capture equipment would increase by $18,000 and $32,000 to achieve this emission reduction. Thus, the cost effectiveness of the fugitive emissions standards would be $400 and $411 per ton of particulate matter removed for typical specialty and carbon steel plants, respectively.

Under Executive Order 12291, the EPA must judge whether a regulation is "major" and therefore subject to the requirement of a regulatory impact analysis. This regulation is not considered major. The standard would have a minimal impact on the economy with a slight increase in the air pollution control system expenditures by 1987 Only slight increases in costs or prices of products are anticipated. The standard would not adversely affect competition, employment, or the ability of the industry to compete with foreign steel firms.

This regulation was submitted to the OMB for review as required by Executive Order 12291.

List of Subjects in 40 CFR Part 60

Air pollution control, Aluminum, Ammonium sulfate plants, Asphalt, Cement industry, Coal, Copper, Electric power plants, Glass and glass products, Grains, Intergovernmental relations, Iron, Lead, Metals, Metallic Minerals, Motor vehicles, Nitric acid plants, Paper and paper products industry, Petroleum, Phosphate, Sewage disposal, Steel, Sulfuric acid plants, Waste treatment and disposal, Zinc, Tires, Incorporation by Reference, Can surface coating, Sulfuric acid plants, Individual organic chemicals, Organic solvent cleaners, Fossil fuel-fired steam generators, Fiberglass insulation, Synthetic fibers, Lime.

Dated: October 22, 1984.

William D. Ruckelshaus,

Administrator.

PART 60—[AMENDED]

1. 40 CFR Part 60, Subpart AA title is revised to read as follows:

Subpart AA—Standards of Performance for Steel Plans: Electric Arc Furnaces Constructed After October 21, 1974, and On or Before August 17, 1983.

2. Section 60.270 is revised to read as follows:

§ 60.270 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces and dust-handling systems.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commenced construction, modification, or reconstruction after October 21, 1974, and on or before August 17, 1983.

(Secs. 111 and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411 and 7601(a)))

3. In § 60.271, paragraph (a) is revised to read as follows:

§ 60.271 Definitions.

* * * * *

(a) "Electric arc furnace" (EAF) means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this dfinition.

* * * * *

4. In 60.272, paragraphs (a)(3)(i), (ii), and (iii) are revised to read as follows:

§ 60.272 Standard for particulate matter.

(a) * * *

(3) Exit from a shop and, due solely to operations of any EAF(s), exhibit 6 percent opacity or greater except:

(i) Shop opacity less than 20 percent may occur during charging periods.

(ii) Shop opacity less than 40 percent may occur during tapping periods.

(iii) Opacity standards under paragraph (a)(3) of this section shall apply only during periods when pressures and either control system fan motor amperes and damper positions or flow rates are being established under § 60.274(c) and (g).

* * * * *

(Secs. 111 and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411 and 7601(a)))

5. In § 60.273, paragraph (c) is added to read as follows:

§ 60.273 Emission monitoring.

* * * * *

(c) No continuous monitoring system shall be required on any modular, multiple-stack, negative-pressure or positive-pressure fabric filters if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer in accordance with § 275(i) of this subpart.

(Secs. 111, 114, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411, 7414, and 7601)))

6. In § 60.274, paragraphs (e), (f), and (g) are redesignated (f), (g), and (h), and paragraphs (b) and (c) are revised and paragraphs (e) and (i) are added to read as follows:

§ 60.274 Monitoring of operations.

* * * * *

(b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis the furnace static pressure (if a DEC system is in use) and either (1) check and record the control system fan motor amperes and damper positions on a once-per-shift basis; or (2) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to

demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A of this part.

(c) When the owner or operator of an EAF is required to demonstrate compliance with the standards under § 60.272(a)(3) and at any other time the Administrator may require that (under Section 114 of the Act, as amended) either the control system fan motor amperes and all damper positions or the volumetric flow rate through each separately ducted hood shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the EAF subject to paragraph (b)(1) or (b)(2) of this section. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of paragraph 276(a).

* * * * *

(e) The owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of hole in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

* * * * *

(i) During any performance test required under § 60.8, and for any report thereof required by § 60.275(c) of this subpart or to determine compliance with § 60.272(a)(3) of this subpart, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside the furnace where direct-shell evacuation systems are used;

(3) Control device operation log; and

(4) Continuous monitor or Reference Method 9 data.

(Secs. 111, 114 and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411, 7414, and 7601(a)))

7 In § 60.275, paragraphs (a)(1), (a)(3), (a)(4), (b), and (c) are revised, and paragraphs (a)(5), (i), and (j) are added to read as follows:

§ 60.275 Test methods and procedures.

(a) * * *

(1) Either Method 5 for negative-pressure fabric filters and other types of control devices or Method 5D for positive-pressure fabric filters for concentration of particulate matter and associated moisture content.

* * * * *

(3) Method 2 for velocity and volumetric flow rate;

(4) Method 3 for gas analysis; and

(5) Method 9 for the opacity of visible emissions.

(b) For Method 5 or 5D, the sampling time for each run shall be at least 4 hours. When a single EAF is sampled, the sampling time for each run shall also include an integral number of heats. Shorter sampling times, when necessitated by process variables or other factors, may be approved by the Administrator. For Method 5 or 5D, the minimum sample volume shall be 4.5 dsmG53 (160 dscf).

(c) For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with § 60.272(a) of this subpart and furnish the Administrator a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;

(2) Plant representative;

(3) Make and model of process, control device, and continuous monitoring equipment;

(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

(5) Rated (design) capacity of process equipment;

(6) Those data required under § 60.274(i) of this subpart;

(i) List of charge and tap weights and materials;

(ii) Heat times and process log;

(iii) Control device operation log; and

(iv) Continuous monitor or Reference Method 9 data.

(7) Test dates and test times;

(8) Test company;

(9) Test company representative;

(10) Test observers from outside agency;

(11) Description of test methodology used, including any deviation from standard reference methods;

(12) Schematic of sampling location;

(13) Number of sampling points;

(14) Description of sampling equipment;

(15) Listing of sampling equipment calibrations and procedures;

(16) Field and laboratory data sheets;

(17) Description of sample recovery procedures;

(18) Sampling equipment leak check results;

(19) Description of quality assurance procedures;

(20) Description af analytical procedures;

(21) Notation of sample blank corrections; and

(22) Sample emission calculations.

* * * * *

(i) Visible emissions observations of modular, multiple-stack, negative-pressure or positive-pressure fabric filters shall occur at least once per day of operation. The observations shall occur when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations will be required. In the case, Reference Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272(a) of this subpart.

(j) Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under § 60.8 to demonstrate compliance with § 60.272(a)(1), (2), and (3) of this subpart.

(Secs. 111, 114, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411, 7414, and 7601(a)))

8. Section 60.276 is added to Subpart AA to read as follows:

§ 60.276 Recordkeeping and Reporting Requirements.

(a) Operation at a furnace static pressure that exceeds the value established under Section 274(f) and either operation of control system fan

motor amperes at valves exceeding ±15 percent of the value established under Section 274(c) or operation at flow rates lower than those established under Section 274(c) may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to Administrator semiannually.

(b) When the owner or operator of an EAF is required to demonstrate compliance with the standard under § 60.275(g)(2) or (g)(3), the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked 30 days prior to the performance test.

(Secs. 111, 114, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411, 7414, and 7601(a)))

9. 40 CFR Part 60, Subpart AAa is added to read as follows:

Subpart AAa—Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983

Sec.

(Secs. 111, 114, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411, 7414, and 7601(a)))

Subpart AAa—Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983

§ 60.270a Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after August 17, 1983.

§ 60.271a Definitions.

(a) As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in Subpart A of this part.

"Argon-oxygen decarburization vessel" (AOD vessel) means any closed-bottom, refractory-lined converter vessel with submerged tuyeres through which gaseous mixtures containing argon and oxygen or nitrogen may be blown into molten steel for further refining.

"Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an electric arc furnace or AOD vessel to the air pollution control device.

"Charge" means the addition of iron and steel scrap or other materials into the top of an electric arc furnace or the addition of molten steel or other materials into the top of an AOD vessel.

"Control device" means the air pollution control equipment used to remove particulate matter from the effluent gas stream generated by an electric arc furnace or AOD vessel.

"Direct-shell evacuation control system" (DEC system) means a system that maintains a negative pressure within the electric arc furnace above the slag or metal and ducts emissions to the control device.

"Dust-handling system" means equipment used to handle particulate matter collected by the control device for an electric arc furnace or AOD vessel subject to this subpart. For the purposes of this subpart, the dust-handling system shall consist of the control device dust hoppers, the dust-conveying equipment, any central dust storage equipment, the dust-treating equipment (e.g., pug mill, pelletizer), dust transfer equipment (from storage to truck), and any secondary control devices used with the dust transfer equipment.

"Electric arc furnace" (EAF) means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. For the purposes of this subpart, an EAF shall consist of the furnace shell and roof and the transformer. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.

"Heat cycle" means the period beginning when scrap is charged to an empty EAF and ending when the EAF tap is completed or beginning when molten steel is charged to an empty AOD vessel and ending when the AOD vessel tap is completed.

"Melting" means that phase of steel production cycle during which the iron and steel scrap is heated to the molten state.

"Negative-pressure fabric filter" means a fabric filter with the fans on the downstream side of the filter bags.

"Positive-pressure fabric filter" means a fabric filter with the fans on the upstream side of the filter bags.

"Refining" means that phase of the steel production cycle during which undesirable elements are removed from the molten steel and alloys are added to reach the final metal chemistry.

"Shop" means the building which houses one or more EAF's or AOD vessels.

"Shop opacity" means the arithmetic average of 24 observations of the opacity of emissions from the shop taken in accordance with Method 9 of Appendix A of this part.

"Tap" means the pouring of molten steel from an EAF or AOD vessel.

§ 60.272a Standard for particulate matter.

(a) On and after the date of which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an EAF or an AOD vessel any gases which:

(1) Exit from a control device and contain particulate matter in excess of 12 mg/dscm (0.0052 gr/dscf);

(2) Exit from a control device and exhibit 3 percent opacity or greater; and

(3) Exit from a shop and, due solely to the operations of any affected EAF(s) or AOD vessel(s), exhibit 6 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the dust-handling system any gases that exhibit 10 percent opacity or greater.

§ 60.273a Emission monitoring.

(a) Except as provided under paragraphs (b) and (c) of this section, a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart.

(b) No continuous monitoring system shall be required on any control device serving the dust-handling system.

(c) No continuous monitoring system shall be required on modular, multiple-stack, negative-pressure or positive-pressure fabric filters if observations of the opacity of the visible emissions from the control device are performed by a

certified visible emission observer in accordance with § 60.275a(c) of this subpart.

(Sec. 114 of the Clean Air Act, as amended (42 U.S.C. 7414))

§ 60.274a Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart shall maintain records of the following information:

(1) All data obtained under paragraph (b) of this section; and

(2) All monthly operational status inspections performed under paragraph (c) of this section.

(b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis the furnace static pressure (if DEC system is in use) and either (1) check and record the control system fan motor amperes and damper position on a once-per-shift basis; or (2) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A of this part.

(c) When the owner or operator of an affected facility is required to demonstrate compliance with the standards under § 60.272a(a)(3) and at any other time the Administrator may require that (under section 114 of the Act, as amended) either the control system fan motor amperes and all damper positions or the volumetric flow rate through each separately ducted hood shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to paragraph (b)(1) or (b)(2) of this section. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of paragraph 276a(c).

(d) The owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

(e) The owner or operator may petition the Administrator to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.

(f) If emissions during any phase of the heat time are controlled by the use of a DEC system, the owner or operator shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. The monitoring device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(g) When the owner or operator of an EAF controlled by a DEC is required to demonstrate compliance with the standard under § 60.272a(a)(3) of this subpart, and at any other time the Administrator may require (under section 114 of the Clean Air Act, as amended), the pressure in the free space inside the furnace shall be determined during the melting and refining period(s) using the monitoring device required under paragraph (f) of this section. The owner or operator may petition the Administrator for reestablishment of the 15-minute integrated average of the pressure whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility.

(h) During any performance test required under § 60.8, and for any report thereof required by § 60.275a(d) of this subpart, or to determine compliance with § 60.272a(a)(3) of this subpart, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside an EAF when direct-shell evacuation control systems are used;

(3) Control device operation log; and

(4) Continuous monitor or Reference Method 9 data.

(Sec. 114 of the Clean Air Act, as amended (42 U.S.C. 7414))

§ 60.275a Test methods and procedures.

(a) Reference methods in Appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with the standards prescribed under § 60.272a of this subpart as follows:

(1) Method 1 for sample and velocity traverses;

(2) Method 2 for velocity and volumetric flow rate;

(3) Method 3 for gas analysis;

(4) Either Method 5 for negative-pressure fabric filters and other types of control devices or Method 5D for positive-pressure fabric filters for concentration of particulate matter and associated moisture content; and

(5) Method 9 for the opacity of visible emissions.

(b) For Method 5 or 5D, the sampling time for each run shall be at least 4 hours. When a single EAF or AOD vessel is sampled, the sampling time for each run shall also include an integral number of heats. Shorter sampling times, when necessitated by process variables or other factors, may be approved by the Administrator. For Method 5 or 5D, the minimum sample volume shall be 4.5 dsm^3 (160 dscf).

(c) Visible emissions observations of modular, multiple-stack, negative-pressure or positive-pressure fabric filters shall occur at least once per day of operation. The observations shall occur when the furnace or vessel is operating in the melting or refining phase of a heat cycle. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where

visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations will be required. In this case, Reference Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272(a) of this subpart.

(d) For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with § 60.272a(a) of this subpart and furnish the Administrator a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;

(2) Plant representative;

(3) Make and model of process, control device, and continuous monitoring equipment;

(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

(5) Rated (design) capacity of process equipment;

(6) Those data required under § 60.274a(h) of this subpart;

(i) List of charge and tap weights and materials;

(ii) Heat times and process log;

(iii) Control device operation log; and

(iv) Continuous monitor or Reference Method 9 data.

(7) Test dates and test times;

(8) Test company;

(9) Test company representative;

(10) Test observers from outside agency;

(11) Description of test methodology used, including any deviation from standard reference methods;

(12) Schematic of sampling location;

(13) Number of sampling points;

(14) Description of sampling equipment;

(15) Listing of sampling equipment calibrations and procedures;

(16) Field and laboratory data sheets;

(17) Description of sample recovery procedures;

(18) Sampling equipment leak check results;

(19) Description of quality assurance procedures;

(20) Description of analytical procedures;

(21) Notation of sample blank corrections; and

(22) Sample emission calculations.

(e) During any performance test required under § 60.8, no gaseous diluents may be added to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(f) When more than one control device serves the EAF(s) or AOD vessel(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$C = \frac{\sum_{n=1}^{N} (CQ)_n}{\sum_{n=1}^{N} (Q)_n}$$

where:

C=concentration of particulate matter in mg/dsm³ (gr/dscf) as determined by Method 5 or 5D.

N=total number of control devices tested.

Q=volumetric flow rate of the effluent gas stream in dsm³/h (dscf/h) as determined by Method 2.

$(CQ)_n$, $(Q)_n$=value of the applicable parameter for each control device tested.

(g) Any control device subject to the provisions of the subpart shall be designed and constructed to allow measurement of emissions using applicable test methods and procedures.

(h) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(1) Base compliance on control of the combined emissions;

(2) Utilize a method acceptable to the Administrator that compensates for the emissions from the facilities not subject to the provisions of this subpart, or;

(3) Any combination of the criteria of paragraphs (h)(1) and (h)(2) of this section.

(i) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, determinations of compliance with § 60.272a(a)(3) will only be based upon emissions originating from the affected facility(ies).

(j) Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under § 60.8 to demonstrate compliance with § 60.272a(a) (1), (2), and (3) of this subpart.

(Sec. 114 of the Clean Air Act, as amended (42 U.S.C. 7414))

§ 60.276a Recordkeeping and reporting requirements.

(a) Records of the measurements required in § 60.274a must be retained for at least 2 years following the date of the measurement.

(b) Each owner or operator shall submit a written report of exceedances of the control device opacity to the Administrator semi-annually. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.

(c) Operation at a furnace static pressure that exceeds the value established under section 274a(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under section 274a(c) or operation at flow rates lower than those established under section 274a(c) may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Administrator semiannually.

(d) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under Section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

(e) When the owner or operator of an EAF or AOD is required to demonstrate compliance with the standard under § 60.275a (h)(2) or (h)(3), the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked 30 days prior to the performance test.

(Sec. 114 of the Clean Air Act, as amended (42 U.S.C. 7414))

(Approved by the Office of Management and Budget under Control Number 2060-0038)

10. Appendix A is amended by adding Method 5D to read as follows:

Appendix A—Reference Test Methods

* * * * *

Method 5D—Determination of Particulate Matter Emissions From Positive Pressure Fabric Filters

1. *Applicability and Principle.*

1.1 Applicability. This method applies to the determination of particulate matter emissions from positive pressure fabric filters. Emissions are determined in terms of

concentration (mg/m³) and emission rate (kg/h).

The General Provisions of 40 CFR Part 60, paragraph § 60.8(e) require that the owner or operator of an affected facility shall provide performance testing facilities. Such performance testing facilities include sampling ports, safe sampling platforms, safe access to sampling sites, and utilities for testing. It is intended that affected facilities also provide sampling locations that meet the specification for adequate stack length and minimal flow disturbances as described in Method 1. Provisions for testing are often overlooked factors in designing fabric filters or are extremely costly. The purpose of this procedure is to identify appropriate alternative locations and procedures for sampling the emissions from positive pressure fabric filters. The requirements that the affected facility owner or operator provide adequate access to performance testing facilities remain in effect.

1.2 Principle. Particulate matter is withdrawn isokinetically from the souce and collected on a glass fiber filter maintained at a temperature at or above the exhaust gas temperature up to a nominal 120 °C (120 — ±14 °C or 248 ±25 °F). The particulate mass, which includes any material that condenses at or above the filtration temperature, is determined gravimetrically after removal of uncombined water.

2. *Apparatus.*

The equipment requirements for the sampling train, sample recovery, and analysis are the same as specified in Sections 2.1, 2.2, and 2.3, respectively, of Method 5 or Method 17

3. *Reagents.*

The reagents used in sampling, sample recovery, and analysis are the same as specified in Sections 3.1, 3.2, and 3.3, respectively, or Method 5 or Method 17

4. *Procedure.*

4.1 Determination of Measurement Site. The configurations of positive pressure fabric filter structures frequently are not amenable to emission testing according to the requirements of Method 1. Following are several alternatives for determining measurement sites for positive pressure fabric filters.

4.1.1 Stacks Meeting Method 1 Criteria. Use a measurement site as specified in Method 1, Section 2.1.

4.1.2 Short Stacks Not Meeting Method 1 Criteria. Use stack extensions and the procedures in Method 1. Alternatively, use flow straightening vanes of the "egg-crate" type (see Figure 5D–1). Locate the measurement site downstream of the straightening vanes at a distance equal to or greater than two times the average equivalent diameter of the vane openings and at least one-half of the overall stack diameter upstream of the stack outlet.

4.1.3 Roof Monitor or Monovent. (See Figure 5D–2.) For a positive pressure fabric filter equipped with a peaked roof monitor, ridge vent, or other type of monovent, use a measurement site at the base of the monovent. Examples of such locations are shown in Figure 5D–2. The measurement site must be upstream of any exhaust point (e.g., louvered vent).

4.1.4 Compartment Housing. Sample immediately downstream of the filter bags directly above the tops of the bags as shown in the examples in figure 5D–2. Depending on the housing design, use sampling ports in the housing walls or locate the sampling equipment within the compartment housing.

4.2 Determination of Number and Location of Traverse Points. Locate the traverse points according to Method 1, Section 2.3. Because a performance test consists of at least three test runs and because of the varied configurations of positive pressure fabric filters, there are several schemes by which the number of traverse points can be determined and the three test runs can be conducted.

4.2.1 Single Stacks Meeting Method 1 Criteria. Select the number of traverse points according to Method 1. Sample all traverse points for each test run.

4.2.2 Other Single Measurement Sites. For a roof monitor or monovent, single compartment housing, or other stack not meeting Method 1 criteria, use at least 24 traverse points. For example, for a rectangular measurement site, such as a monovent, use a blanced 5 x 5 traverse point matrix. Sample all traverse points for each test run.

4.2.3 Multiple Measurement Sites. Sampling from two or more stacks or measurement sites may be combined for a test run, provided the following guidelines are met:

a. All measurement sites up to 12 must be sampled. For more than 12 measurement sites, conduct sampling on at least 12 sites or 50 percent of the sites, whichever is greater. The measurement sites sampled should be evenly, or nearly evenly, distributed among the available sites; if not, all sites are to be sampled.

b. The same number of measurement sites must be sampled for each test run.

c. The minimum number of traverse points per test run is 24. An exception to the 24-point minimum would be a test combining the sampling from two stacks meeting Method 1 criteria for acceptable stack length, and Method 1 specifies fewer than 12 points per site.

d. As long as the 24 traverse points per test run criterion is met, the number of traverse points per measurement site may be reduced to eight.

Alternatively, conduct a test run for each measurement site individually using the criteria in Sections 4.2.1 or 4.2.2 for number of traverse points. Each test run shall count toward the total of three required for a performance test. If more than three measurement sites are sampled, the number of traverse points per measurement site may be reduced to eight as long as at least 72 traverse points are sampled for all the tests.

The following examples demonstrate the procedures for sampling multiple measurement sites.

Example 1: A source with nine circular measurement sites of equal areas may be tested as follows: For each test run, traverse three measurement sites using four points per diameter (eight points per measurement site). In this manner, test run number 1 will include sampling from sites 1, 2, and 3; run 2 will include samples from sites 4, 5, and 6; and run 3 will include sites 7, 8, and 9. Each test area may consist of a separate test of each measurement site using eight points. Use the results from all nine tests in determining the emission average.

Example 2: A source with 30 rectangular measurement sites of equal areas may be tested as follows: For each of three test runs, traverse five measurement sites using a 3 x 3 matrix of traverse points for each site. In order to distribute the sampling evenly over all the available measurement sites while sampling only 50 percent of the sites, number the sites consecutively from 1 to 30 and sample all the even numbered (or odd numbered) sites. Alternatively, conduct a separate test of each of 15 measurement sites using Sections 4.2.1 or 4.2.2 to determine the number and location of traverse points, as appropriate.

Example 3: A source with two measurement sites of equal areas may be tested as follows: For each test of three test runs, traverse both measurement sites using Sections 4.2.3 in determining number of traverse points. Alternatively, conduct two full emission test runs of each measurement site using the criteria in Sections 4.2.1 or 4.2.2 to determine the number of traverse points.

Other test schemes, such as random determination of traverse points for a large number of measurement sites, may be used with prior approval from the Administrator.

4.3 Velocity Determination. The velocities of exhaust gases from postitive pressure baghouses are often too low to measure accurately with the type S pitot specified in Method 2 [i.e., velocity head <1.3 mm H_2O (0.05 in. H_2O)]. For these conditions, measure the gas flow rate at the fabric filter inlet following the procedures in Method 2. Calculate the average gas velocity at the measurement site as follows:

$$\bar{v} = \frac{Q_i}{A_o} \cdot \frac{T_o}{T_i}$$

Where:

$\bar{v}$=Average gas velocity at the measurement site(s), m/s (ft/s).

Q_i=Inlet gas volume flow rate, m³/s (ft³/s).

A_o=Measurement site(s) total cross-sectional area, m² (ft²).

T_o=Temperature of gas at measurement site, °K (°R)

T_i=Temperature of gas at inlet, °K (°R).

use the average velocity calculated for the measurement site in determining and maintaining isokinetic sampling rates. Note: All sources of gas leakage, into or out of the fabric filter housing between the inlet measurement site and the outlet measurement site must be blocked and made leak-tight.

Velocity determinations at measurement sites with gas velocities within the range measurable with the type S pitot [i.e., velocity head >1.3 mm H_2O (0.05 in. H_2O)] shall be conducted according to the procedures in Method 2.

4.4 Sampling. Follow the procedures specified in Section 4.1 of Method 5 or Method 17 with the exceptions as noted above.

4.5 Sample Recovery. Follow the procedures specified in Section 4.2 of Method 5 or Method 17.

4.6 Sample Analysis. Follow the procedures specified in Section 4.3 of Method 5 or Method 17.

5. *Calibration.*

Follow the procedures as specified in Section 5 of Method 5 of Method 17.

6. *Calculations.*

Follow the procedures as specified in Section 6 of Method 5 or Method 17 with the exceptions as follows:

6.1 Total volume flow rate may be determined using inlet velocity measurements and stack dimensions.

6.2 Average Particulate Concentration. For multiple measurement sites, calculate the average particulate concentration as follows:

$$\bar{C} = \frac{\sum_{i=1}^{n} m_i}{\sum_{i=1}^{n} Vol_i}$$

Where:

m_i=The mass collected for run i of n, mg(gr).

Vol_i=The sample volume collected for run i of n, Nm^3 (scf).

$\bar{C}$=Average concentration of particulate for all n runs, mg/Nm^3 (gr/scf).

7. *Bibliography.*

The bibliography is the same as for Method 5, Section 7.

(Secs. 111, 114, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7411, 7414, and 7601(a)))

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