ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL-2915-5]

Standards of Performance for New Stationary Sources; Basic Oxygen Process Furnaces

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: On January 20, 1983, amendments to the standards of performance for primary emissions from basic oxygen process furnaces (BOPF's) (40 CFR Part 60, Subpart N) were proposed, together with standards of performance for secondary emissions from basic oxygen process steelmaking facilities (40 CFR Part 60, Subpart Na). This action promulgates the amendments to Subpart N, which are applicable to any BOPF constructed, reconstructed, or modified after June 11, 1973. This action also promulgates Subpart Na, which is applicable to any top-blown BOPF and to any hot metal transfer station or skimming station used for a bottom-blown or top-blown BOPF, for which construction, reconstruction, or modification commenced after January 20, 1983.

These standards implement section 111 of the Clean Air Act and are based on a determination that iron and steel plants cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. The intended effect of these standards is to require all new, modified, and reconstructed BOPF's to control primary and secondary 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: January 2, 1986.

Under section 307(b)(1) of the Clean Air Act, judicial review of the actions taken by this notice 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 brought by the EPA to enforce these requirements.

ADDRESS: *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 "Basic Oxygen Process Furnaces—Background Information for Promulgated Standards" (EPA-450/3-82-005b). The BID contains: (1) A summary of all the public comments made on the proposed amended standards along with responses to the comments, (2) a summary of the changes made to the standards since proposal, and (3) a final environmental impact statement (EIS) for the final standards.

Docket. Docket number A-79-6, 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

The new source performance standards (NSPS's) for BOPF's were promulgated on March 8, 1974 (39 FR 9318). The standards of performance limited mass emissions of particulate matter from both open hood and closed hood primary emission control systems to no greater than 50 mg/dscm (0.022 gr/dscf). An opacity limit was promulgated on April 13, 1978, as a supplement to the mass standard (43 FR 15602). The opacity of exhaust gases from primary emission control devices was limited to less than 10 percent, except that an opacity greater than 10 percent but less than 20 percent could occur once per steel production cycle.

In 1979, the Natural Resources Defense Council, Inc.; Friends of the Earth, Inc.; and the Group Against Smog and Pollution petitioned the United States Court of Appeals for the District of Columbia for the regulation of fugitive or "secondary" emissions not captured by the BOPF primary control system. Almost simultaneously, the results of the 4-year review of Subpart N were announced, including the Agency's intention to revise Subpart N to regulate secondary emissions (44 FR 17460, March 21, 1979). Noting this action, the Court dismissed the suit and approved the anticipated schedule for proposing and promulgating secondary emission standards. Amendments to Subpart N were proposed on January 20, 1983.

The proposed amendments were contained in two Subparts of 40 CFR Part 60—Subparts Na and N. As proposed, Subpart Na applied exclusively to secondary emissions from BOPF's (including top-blown and bottom-blown furnaces) and hot metal transfer stations or skimming stations for which construction, modification, or reconstruction commenced after January 20, 1983. The proposed secondary standards limited visible emissions from the BOPF shop roof monitor (or other building openings) to an opacity no greater than 10 percent during the operation of a top-blown BOPF, except that an opacity greater than 10 percent but less than 20 percent was permitted once per steel production cycle. Visible emissions from bottom-blown furnaces were limited to an opacity no greater than 30 percent, except that an opacity greater than 30 percent but less than 60 percent was permitted twice per steel production cycle. The proposed standards required that compliance with the roof monitor visible emission standards be determined by Reference Method 9, based on a 3-minute average. Mass emissions from any device used solely to collect secondary emissions were limited to 23 mg/dscm (0.010 gr/dscf). An opacity limit of 5 percent for secondary emission collection devices was also proposed. Under the proposed standards, roof-mounted electrostatic precipitators (RMESP's) used to control secondary emissions were exempt from the mass standard and the opacity limit for secondary emission collection devices, as were any devices used to collect both primary and secondary emissions.

Subpart N contains standards of performance that regulate primary emissions of particulate matter from BOPF's constructed, reconstructed, or modified after June 11, 1973. On January 20, 1983, amendments also were proposed for Subpart N BOPF's constructed, reconstructed, or modified between June 11, 1973, and January 20, 1983. These proposed amendments did not revise the existing emission limit of 50 mg/dscm (0.022 gr/dscf) for mass emissions of particulate matter from the primary emission control device or the existing opacity limit for visible emissions exiting the primary emission control device. The existing standard limits visible emissions exiting the primary emission control device to an opacity of less than 10 percent, except that an opacity greater than 10 percent

but less than 20 percent may occur once per steel production cycle. Additionally, no changes were proposed to the existing monitoring or reporting requirements. The proposed amendments did revise the test method and procedure institutions for sampling of mass emissions by Reference Method 5. The existing standard required a sampling rate of at least 0.9 dscm/hr (0.53 dscf/min); the proposed amendments required a minimum sample volume of at least 0.9 dscm (32 dscf). Except for this sample volume requirement, no other changes to the existing procedures for determining compliance were proposed for these Subpart N BOPF's.

Also on January 20, 1983, amendments to Subpart N were proposed to regulate BOPF's constructed, reconstructed, or modified after January 20, 1983. These proposed standards adjusted the mass emission limits and the test methods and procedures for determining compliance. For BOPF's with a closed hood primary emission control system, the proposed amendments limited mass emissions of particulate matter to no more than 68 mg/dscm (0.030 gr/dscf), as measured for the primary oxygen blow. For BOPF's with an open hood primary emission control system, mass emissions of particulate matter were limited to no more than 50 mg/dscm (0.022 gr/dscf), as measured for the primary oxygen blow. Even though a shorter testing period was proposed, these mass emission limits were comparable to the existing standard.

Data presented in Table 4–12 of the BID suggest that a lower concentration limit for open hood furnaces may be possible. These data show performance levels better than performance measured during testing to support the existing NSPS limit of 50 mg/dscm (0.022 gr/dscf). Determination of the equipment design, operating criteria, and process variables responsible for producing lower emission concentrations from the open hood furnaces will be examined during the next 4-year NSPS review for consideration of a change in the concentration limit.

Primary emission control system performance data for one plant in Table 4–9 of the BID suggest that operation of venturi scrubbers at high pressure drops, approaching 90 inches of water, could achieve lower emission concentrations than those required by the existing or proposed rule (−60 inches). It is true that pressure drop is a major factor; however, other factors such as gas flow rate, throat design, and liquid-to-gas ratio will also affect outlet concentration. A further factor to be considered is that increased pressure drop requires differently sized equipment to apply more scrubbing energy. A cost comparison for one model system converted from 60-inch to 80-inch pressure drop showed incremental cost effectiveness of $60,000 per ton of additional particulate removed. On a cost-effectiveness basis, it appears that a reduction in required emission concentration based on higher scrubber pressure drop observed in one plant is inappropriate.

The proposed amendments to the test methods and procedures for sampling of mass emissions by Reference Method 5 specified that sampling for each run must continue for an integral number of primary oxygen blows with a total duration of at least 60 minutes. A minimum sample volume requirement of 0.9 dscm (32 dscf) also was proposed.

A proposed definition for "primary oxygen blow" also was added to § 60.141. The proposed definition defined "primary oxygen blow" as the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel or through tuyeres in the bottom or the bottom and sides of the vessel. Reblows were excluded from the proposed definition, as was the introduction of nitrogen through tuyeres in the bottom or bottom and sides of the vessel.

No changes were proposed to the existing opacity standard for primary emission control devices. Under the existing standard, visible emissions from control devices for open or closed hood primary control systems were limited to no more than 10 percent opacity, except that an opacity greater than 10 percent but less than 20 percent could occur once per steel production cycle. No changes to the test methods and procedures for determining compliance with the opacity limit were proposed.

The Final Standards

The final secondary emission standards (Subpart Na) apply to any new, modified, or reconstructed top-blown BOPF and to any new, modified, or reconstructed hot metal transfer station or skimming station used with a bottom-blown or a top-blown BOPF, for which construction commences after January 20, 1983. Visible emissions from shop roof monitors (or other building openings) are limited to an opacity no greater than 10 percent during the steel production cycle of a top-blown BOPF, and during hot metal transfer and skimming for a bottom-blown BOPF except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle. Visible emissions from the shop roof monitor during the furnace cycle (i.e., the steel production cycle excluding hot metal transfer and skimming) of a bottom-blown BOPF are not subject to the roof monitor opacity standard. As proposed, Reference Method 9, with data reduction procedures for 3-minute averages, will be used to determine compliance with the secondary emission opacity standards.

The numerical emission limit reflects the performance of an open hood primary system used also for secondary emission control, in addition to local hooding for hot metal transfer and skimming emissions, which is considered best demonstrated technology (BDT) for the capture of secondary emissions from the affected facilities. Preliminary investigation indicates that this limit also could be met by using fume suppression systems to control hot metal transfer emissions, in addition to other controls on secondary emissions. Fume suppression appears to achieve emission reductions at costs significantly below those of the BDT on which the standards are based. The Administrator does not consider fume suppression systems to be adequately demonstrated to serve as the basis for the standards. However, the Administrator encourages sources to develop fume suppression systems that can meet the requirements of the standards. Section 111(j) of the Clean Air Act authorizes the Administrator to grant innovative technology waivers for such purposes.

To ensure the collection of secondary emissions from affected facilities, the final standards limit mass emissions from devices used solely for the collection of secondary emissions to 23 mg/dscm (0.01 gr/dscf). This numerical limit is based on the performance of a baghouse that is considered BDT for secondary emission collection. An opacity limit of 5 percent for the secondary emission collection device also is included to ensure proper operation and maintenance of the equipment. These emission limits also apply only to top-blown BOPF's and to hot metal transfer stations or skimming stations used with a bottom-blown or a top-blown BOPF.

Under the promulgated standards, fume suppression systems are exempt from the mass and opacity limits for secondary emission collection devices, as are devices used for the collection of primary and secondary emissions. EPA had proposed to exempt RMESP's from

the limits for a secondary control device, based on a judgment that an RMESP that met only the roof monitor opacity standard "would most likely be as good or better than BDT" (48 FR 2667, col. 3). EPA now believes that such a judgment is premature. In particular, such an RMESP might have a greater flow volume, and thus greater emissions, than BDT. EPA is therefore not promulgating any such exemption. However, RMESP's are acceptable as emission control devices if they meet both the mass and opacity standards. because testing of RMESP's may be impractical, the Agency will consider waiving the mass test provided that the RMESP meets the opacity standard and is found to be properly engineered and installed.

The monitoring requirements in the promulgated standards have been revised since proposal to require a device (or devices) for the continual monitoring and recording of exhaust ventilation rates, or levels of exhaust ventilation, for each duct of the secondary emission control system during each phase of each steel production cycle. The device (or devices) must be placed at a location (or locations) near each capture point of the secondary emission control system or in an alternative location (or locations) approved in advance by the Administrator. New provisions also have been added for the operation of a strip chart recorder, should this equipment be used as a recording mechanism.

A new provision also has been added to the final standards that requires the semiannual reporting of all measurements (as indicated by the monitoring device) over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent compliance test for mass emissions from the secondary emission collection devices. The accuracy of the measurements may be considered when measurement results are reported. Also, when a scrubber primary emission control device is used to collect secondary emissions, the promulgated standards require the continual monitoring and recording of scrubber pressure drop during each phase of each furnace production cycle. Again, all measurements over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent performance test must be reported semiannually.

Data currently are not available to establish a separate mass standard specifically for secondary emissions collected by a scrubber primary emission control device. Prior to the next 4-year review of Subparts N and Na, the Agency will collect and evaluate test data that may become available documenting the performance of primary emission control devices during secondary operations.

Section 60.144a, which specifies test methods and procedures, also has been revised since proposal. Instructions for aggregating visible emissions from multiple building openings [60.144a(b)(1)] have been deleted from the final rule. Sample volume requirements have been increased from the proposed level of 2.27 dscm (80 dscf) to a minimum of 5.67 dscm (200 dscf) for each run. A new provision has been added to the final rules that allows smaller sample volumes, subject to approval by the Administrator, when necessitated by process variables or other factors. Proposed instructions for determining compliance by Reference Method 2 for devices that monitor exhaust ventilation rates have been revised to require 12 pairs of readings for each duct of the secondary emission capture system. Comparable instructions for determining compliance by Reference Method 2 also have been added for devices that monitor the levels of exhaust ventilation and record only step changes when a set point is reached.

Compliance provisions of § 60.145a have been revised since proposal to allow an owner or operator of a BOPF shop that normally operates two furnaces with overlapping cycles to shut down one furnace during compliance testing for both mass and visible emission standards. A new provision has been added to § 60.145a that requires the owner or operator to operate the furnace being tested at exhaust ventilation rates or levels for each duct of the secondary emission control system that are appropriate for single-furnace operation. Following the compliance test, the owner or operator must operate the secondary emission control system at exhaust ventilation rates or levels (for each duct of the system) that are no lower than 90 percent of the values established during the most recent compliance test. As previously noted, all measurements (as indicated by the monitoring device) that average more than 10 percent below the average levels maintained during the most recent compliance test for mass emissions from the secondary emission collection device must be included in a semiannual report. Although the report would not be considered evidence of a violation of the emission limit, it could indicate possible improper operation or maintenance of the collection device.

In the final rule, the language of § 60.145a has been changed to require that visible emission observations for both hot metal transfer and skimming emissions begin with the startup of operation and terminate 3 minutes after completion of the operation. A new provision has been added that requires all visible emission observations to be identified and recorded in conjunction with the starting and stopping times of regulated operations in the steel production cycle. Instructions for determining compliance with the 5-percent opacity standard and the 0.010-gr/dscf mass standard for secondary emission collection devices also have been added to § 60.145a.

The visible emissions observation limit proposed for hot metal transfer and skimming was based on roof monitor opacity observations in a top-blown furnace shop, as is the final rule. Some difficulties were encountered in the data collection process for hot metal transfer and skimming sources. An overlapping equipment operating schedule caused emissions from more than one vessel to be mixed, resulting in higher opacities than would have been measured for a single vessel. As a result, the opacity standard for these sources may be higher than necessary. In our engineering judgment, however, this data collection difficulty does not impair the achievability of the standard because there are no significant process differences between hot metal transfer and skimming in bottom-blown furnace shops as opposed to top-blown furnace shops. Likewise, equipment used to perform these processes is not necessarily different in bottom-blown versus top-blown shops. As part of the 4-year NSPS review process, EPA will collect more data for hot metal transfer and skimming sources and will revise the standard if the new data indicate such a revision is appropriate.

Other clarifying changes to Subpart Na since proposal include several revisions to definitions. The definition of "hot metal transfer" has been changed to include all transfer operations, and the definition of "secondary emissions" has been revised to include specifically hot metal transfer and skimming emissions. Also included in this definition are particulate matter emissions that escape from openings in the primary emission control system, such as lance hole openings, or from gaps or tears in the ductwork of the primary emission control system or from leaks in hoods. In addition, the definition of "steel production cycle"

has been expanded to include preheating (when used) and vessel turnup, as well as turndown, during sampling operations. New definitions also have been added for "primary emissions," "primary emission control system," "secondary emission control system," and "fume suppression system." Finally, the definition of "startup" has been deleted because a definition is now included in the General Provisions for 40 CFR Part 60.

A number of changes have been made since proposal to the amendments to the existing standard for primary emissions. The title of the existing standard has been revised to read "Subpart N—Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973." The language and format of the existing standard also have been clarified to indicate clearly the applicability of requirements for BOPF's constructed, reconstructed, or modified after June 11, 1973, but on or before January 20, 1983, and for BOPF's constructed, reconstructed, or modified after January 20, 1983.

No changes to the existing mass and visible emission limits for the primary emission control device have been made since proposal for Subpart N BOPF's constructed, reconstructed, or modified after June 11, 1973, but on or before January 20, 1983. Except for an increased sample volume requirement, Subpart N BOPF's will continue to determine compliance with these limits as prescribed by the existing standards. However, the proposed minimum sample volume requirement of 0.9 dscm (32 dscf) specified in § 60.144(b)(1) for mass sampling by Reference Method 5 has been increased to a minimum of 1.5 dscm (53 dscf). It should be noted that the minimum sample volume of 9.9 dscm (32 dscf) proposed under subparagraph (b)(1) was the result of a **Federal Register** misprint; a minimum sample volume of 0.9 dscm (32 dscf) was intended.

Since proposal on January 20, 1983, EPA has become aware of a difference in furnace cycle time between top-blown and bottom-blown furnaces that may impact measured emission concentrations for those facilities regulated under Subpart N. In general, bottom-blown furnaces have shorter oxygen blowing periods than top-blown furnaces. The testing provisions for those BOPF's constructed, reconstructed, or modified after June 11, 1973, but on or before January 20, 1983, allow testing from the beginning of the oxygen blow, or scrap preheat if practiced, until just prior to tapping. The bulk of the particulate emissions occur during the oxygen blow, however. With a shorter oxygen blowing period and roughly the same length non-blowing period as top-blown furnaces, the bottom-blown furnaces are allowed a greater proportion of test time during non-blowing periods, thus tending to dilute the measured particulate concentration more than is allowed for top-blown furnaces. EPA will study whether different sampling times would better reflect BDT and intends to propose revise sample period requirements and mass standards, as may be appropriate for top-bottom and bottom-blown furnaces under Subpart N as part of the 4-year NSPS review cycle.

The final rules continue the monitoring requirements of the existing primary standards for Subpart N BOPF's with certain minor changes. Under § 60.143(b)(2), a monitoring device is required for the continuous measurement of the water supply pressure to the control equipment; the pressure sensor or tap for the device must be located close to the water discharge point. The existing standards then state that the Administrator may be consulted for approval of alternative locations for the pressure sensor or tap. Under the final rules, alternative locations for the pressure sensor or tap must be approved in advance by the Administrator. The word "continuous" also was changed to "continually" to avoid confusion with General Provision requirements relating to continuous monitoring systems, as defined in 40 CFR 60.2.

Additionally, § 60.143 was amended to reduce the frequency of reporting requirements from quarterly to semiannually. Under the final rules, each owner or operator must report semiannually any measurements (as indicated by the monitoring device) over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent compliance test for mass emissions. The accuracy of these measurements may be considered when measurement results are reported. Although reporting of these measurements would not be considered evidence of noncompliance with the standards, the values reported may indicate a potential operation or maintenance problem with the device that necessitates a compliance inspection, particularly if a repeated pattern is reported.

A number of changes also were made to the definitions for terms applicable to Subpart N BOPF's. The final rules include a revised definition of "steel production cycle" for Subpart N BOPF's constructed, reconstructed, or modified after June 11, 1973, but on or before January 20, 1983. For these BOPF's, the current definition of "steel production cycle" has been expanded to include sampling (vessel turndown and turnup) operations. A new definition also was added for "primary emissions." "Primary emissions" means particulate matter emissions from the BOPF generated during the steel production cycle and captured by the primary emission control system. Also, the definition of "startup" was deleted from the final rule because a definition is now included in the General Provisions of 40 CFR Part 60. The proposed definition of "basic oxygen process furnace" has not been revised since proposal.

The final amendments to Subpart N for BOPF's constructed, reconstructed, or modified after January 20, 1983, continue the proposed requirements with few exceptions. No changes to the adjusted limits for mass emissions from open or closed hood primary control systems have been made since proposal. The final rules require that after January 20, 1983, particulate emissions from any new, modified, or reconstructed BOPF with an open hood primary system be limited to 50 mg/dscm (0.022 gr/dscf), as measured for the primary blow. For any BOPF constructed, modified, or reconstructed after January 20, 1983, particulate emissions from any BOPF for which closed hooding is the primary control method are limited to 68 mg/dscm (0.030 gr/dscf), as measured for the primary blow. Although the sampling period (i.e., the primary blow) is different than the existing standard, the level of control required by the revised standards is comparable to the level of control required under the existing standard. With the exception of an increased sample volume requirement, no changes to the Reference Method 5 test methods and procedures for determining compliance with the adjusted mass emission limits have been made since proposal. The proposed minimum sample volume requirement of 0.9 dscm (32 dscf) has been increased to a minimum of 1.5 dscm (53 dscf). As proposed, shorter sampling times and smaller sample volumes are permitted when necessitated by process variables or other factors, subject to approval by the Administrator.

A new operating requirement pertaining to the operation of the primary emission control system during reblows has been added since proposal. BOPF's required to meet a mass emission limit based on the primary

oxygen blow are required to operate the gas cleaning device during any reblow in a manner identical to operation during the primary oxygen blow. This requirement applies during compliance testing and during routine operation following any compliance test. This provision was added to ensure that mass emissions generated during a reblow are controlled at the same level as mass emissions occurring during the primary oxygen blow. Under typical operating conditions, no significant increase in electrical power consumption for the primary gas cleaning system would occur due to this requirement.

No changes have been made to the existing opacity standard for the primary control device. The existing standard limits visible emissions from control devices for open or closed hood primary control systems to no more than 10 percent opacity, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle. Compliance with the opacity standard would be determined with the use of Reference Method 9, as prescribed under the existing standards.

The final amendments include changes in definitions of terms applicable to BOPF's constructed, reconstructed, or modified after January 20, 1983. Although the definition of "primary oxygen blow" has not been revised since proposal, the definition of "steel production cycle" has been expanded to include sampling operations (vessel turndown and turnup) and deslagging operations.

BOPF's constructed, reconstructed, or modified after January 20, 1983 also are subject to the amended monitoring and reporting requirements. As discussed previously, § 60.143 has been clarified to require advance approval by the Administrator for alternative locations for the monitoring device pressure sensor or tap. The final standards also reduce the frequency of reporting requirements from quarterly to semiannually.

Summary of Environmental, Energy, and Economic Impacts

The impacts of the secondary emission standards have not changed since proposal. Withdrawal of the roof monitor opacity standard for bottom-blown furnaces would not affect the nationwide environmental, energy, or economic impacts because the impacts of the standards are based on projections for increased capacity for existing top-blown furnaces. Minor revisions to the estimated environmental, energy, and economic impacts are included in Docket No. A-79-6 as item IV-B-7. These changes contain a revised discussion of the water pollution impacts of Regulatory Alternative III when wet or semiwet electrostatic precipitators (ESP's) are used in lieu of other primary control systems. These comments also indicate that the gas cooling and conditioning system used with an ESP must be designed as a total evaporation system because the steel industry effluent regulation (40 CFR Part 420, May 27, 1982) specifies no discharge from these systems. With these changes, the analysis of nationwide environmental, energy, and economic impacts in Volume I of the BID is now considered the final EIS for the promulgated standards.

Briefly, the standards would reduce secondary particulate emissions from BOPF facilities for which construction is expected to commence during the period 1981 through 1986 by about 2,527 tons per year, assuming the use of open hood control. If closed hood controls were used, secondary emissions would be reduced by about 2,718 tons per year. No adverse water, solid waste, or noise impacts would result from the implementation of the secondary emission standards, although the level of solid waste from BOPF facilities would increase by about 2 percent with open hood controls and by about 2.5 percent with closed hood controls, due to the control of secondary emissions.

The cumulative capital cost associated with the secondary emission standards through the first 5 years would be about $18.2 million, assuming the use of open hood controls. The annualized cost would be about $5.6 million per year. If closed hooding were used as a means of compliance, the capital costs through the first 5 years would be about $29.4 million, while annualized costs would be about $3.8 million per year. In each case, the price of finished steel would increase by about 0.2 percent by the end of the fifth year.

Further analysis of secondary emission control technologies indicates that the cost effectiveness of the control technologies that can be used to comply with the final standards ranges from $1,665 to $3,727 per ton of particulate matter removed for furnace emissions and from $1,755 to $3,100 per ton of particulate matter removed for hot metal transfer stations. In addition, new BOPF's may be able to employ lower cost, innovative hot metal transfer controls. However, the aggregated cost effectiveness of $2,245 per ton of particulate matter for secondary emission controls has not been revised since proposal.

Electrical energy requirements for BOPF control systems that commence construction during the period 1981 through 1986 would increase by about 60 percent, or 22.8 million kWh per year, assuming the use of open hood control.

Public Participation

During development of the proposed standards, trade associations, plant personnel, equipment manufacturers and vendors, environmental groups, and other interested parties supplied information and data for input on various aspects of the standards. The standards recommended for proposal were discussed at meetings of the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) held December 2, 1980, and September 22-23, 1981. These meetings were open to the public and each attendee was given an opportunity to comment on the recommended standards. The standards were proposed January 20, 1983. A public hearing on the proposed standards was not held because it was not requested by commenters or other interested parties. The public comment period extended from January 20, 1983, to April 5, 1983. A total of five public comments were received. All written comments have been considered and, where appropriate, changes to the proposal have been incorporated in the final standards.

Significant Comments and Changes to the Proposed Amendments

Comments on the proposed amendments and revisions were received from four industry representatives and one individual with expertise in BOPF emission testing. A detailed discussion of these comments and responses can be found in the BID for the promulgated standards referenced in the ADDRESSES section of this preamble. The summary of comments and responses in the BID serves as the basis for the changes that have been made to the proposed standards. The major comments and responses are summarized in this preamble under the following headings: Reference Method 9 and the 3-Minute Average, Best Demonstrated Technology for Bottom-Blown Furnaces, Concentration Standard for Secondary Emission Collection Devices, Roof-Mounted Electrostatic Precipitators, and Fume Suppression Systems.

Reference Method 9 and the 3-Minute Average

The majority of the industry representatives' comments reflect their

concern regarding the use of a 3-minute data reduction procedure for analysis of visible emission data by Reference Method 9. The commenters noted that Method 9 requires that an opacity value consist of the average of 24 consecutive visible emission observations taken at 15-second intervals and that the proposed standards alter this requirement to produce an opacity value based on an average of 12 consecutive visible emission observations.

Two commenters contended that the public was not afforded sufficient opportunity to comment on the proposed changes. One commenter further asserted that the proposed changes are not supported by any analysis of the effects of the changes on the scientific reliability of Method 9. This commenter concluded that the changes constitute *ad hoc* rulemaking and noted that such procedures have been invalidated by *Donner Hanna Coke Corp. v. Costle*, 464 F. Supp. 1295 (W.D.N.Y. 1979). The commenter believes that "The 'Donner Hanna' Court decision clearly demonstrates that the test method used to evaluate compliance with a regulation is as important as the regulation itself. Merely specifying the test method is not enough when the accuracy and precision of the method are unknown in the prescribed application."

The commenters also indicated that the proposed 3-minute average contradicts previously articulated policy about how Method 9 should be used. In support of this, one commenter noted that "In previous instances, EPA has suggested that there is no known basis for altering the procedures and methodology established under Method 9. For example, on November 24, 1982, while reconsidering the Illinois State implementation plan (SIP), the Administrator stated:

> There is no means, using Method 9, to account for plumes less than 6 minutes in duration (noncontinuous). There is also no means, using the averaging techniques of Method 9, to account for exemption periods other than 6 minutes or for aggregation of any duration. (47 FR 5300, 5302).

The second commenter noted that "In the past, EPA has recognized that [Method 9] cannot be used for intermittent non-stack sources."

In responding to these comments, we first examined the question of whether the public has had opportunity to comment on the proposed changes. We conclude that both the general public and the steelmaking facilities with BOPF's have had ample opportunity to participate in and comment on the proposed changes. Prior to proposal, representatives of public interest groups and steel companies were provided several opportunities to comment on the 3-minute average. These opportunities are detailed in the response to comment 2.5.1 in the BID for the final standards. At proposal, the preamble to the regulations discussed testing and data reduction procedures used to establish the visible emission standards and the procedures that would be followed to determine compliance with the visible emission standards (48 FR 2662). Comments received on these procedures are being taken into account in these final standards.

In addition to the information provided to the public before proposal, an analysis of the effects of the proposed changes on the scientific reliability of Method 9 was included in the docket that accompanied the proposed rule (II-B-92). The information in this analysis demonstrated that the precision and accuracy of the proposed changes to the Method 9 data reduction procedure for visible emission observations of BOPF's are equivalent to the precision and accuracy in the current Method. (This analysis is discussed in detail in the BID.) Moreover, no new data or information on the visible emission standards that contradicts the findings of our analysis was included with the public comments. Therefore, the public has been provided sufficient opportunity to comment on the proposed performance testing and data analysis procedures.

We note that in citing the Illinois SIP reconsideration, the commenter suggested that statements about the use of Method 9, in its current form, should limit how the Method might be modified. This suggestion is, however, without merit. Rather, the validity of modifications to standards and test methods (and the relationship between these) set forth in 40 CFR Part 60 must be evaluated and must be supported on their own merits.

As to the question of whether Reference Method 9 can be used for intermittent nonstack sources, it should be noted that since its promulgation December 23, 1971 (36 FR 24895), Method 9 has been amended to observe visible emissions from both control device exhaust stacks and nonstack sources (39 FR 39872, November 12, 1974). (See, for example, subparts AA and BB.) Indeed, the Method, at paragraph 2.1, specifically includes procedures to be used in determining visible emissions from nonstack sources such as roof monitors. Often, both control devices and nonstack sources such as roof monitors intermittently emit plumes of varying opacity; i.e., visible emissions vary with process or control device operation and are observed only during part of the time the emission source is operating. Also, emissions are observed only when they exceed the visibility threshold level of about 2 percent opacity. Reference Method 9 can be applied accurately to both categories of emission points by following the procedures of paragraph 2.1 and by recording visible emission observations of zero percent opacity when no visible emissions are evident.

The passage from Method 9 cited by the Court in *Donner Hanna* does not state that Method 9 is inappropriate for characterizing visible emissions from all points of intermittent emissions:

> EPA recognizes that certain types of opacity violations that are intermittent in nature require a different approach in applying the opacity standards. . . . (39 FR 39873)

The passage cited by the Court indicates that Method 9 (with the 6-minute averaging technique) may not characterize the performance of capture or control technologies adequately in certain cases. This can be illustrated by the hypothetical example of a source that exhibits zero opacity for 23 out of 24 readings and 25 percent on the 24th reading. On a 6-minute average basis, the opacity would be calculated as 1 percent. On a 15-second basis, opacity would simply be 23 periods of zero and 1 period of 25 percent. It is obvious that this latter method of presenting the data is much more descriptive of the emission characteristics in this case than is the 6-minute 1-percent opacity average. In the broader context, this hypothetical example illustrates how shorter averaging periods more accurately reflect the character of short-duration plumes. (It also shows how general opacity standards that are commonly used in SIP's do not account for plumes of short duration.) For this reason, a shorter averaging time and a higher numerical visible emission standard were proposed for BOPF's. A 6-minute averaging period could have been selected to analyze BOPF visible emission data. If this option had been selected and implemented, the numerical level of the standard would have been about one-half the numerical level proposed in conjunction with a 3-minute averaging period. However, BOPF secondary emissions are typically of short duration, and a 3-minute averaging period more closely characterizes the performance of the capture systems used to control the emissions than a 6-minute averaging period.

Finally, it is agreed that the test method used to determine compliance

with a standard is very important in establishing the stringency or effect of a standard. For that reason, the basis for the standard, including not only the data base but also both the test method used to develop the data base and the test method used for compliance, must be considered in establishing a standard.

In conclusion, it is noteworthy that this proposed rulemaking does not affect Method 9 data reduction procedures or application of Method 9 to all sources regulated in 40 CFR Part 60. Rather, it only establishes procedures for BOPF's that commence construction, modification, or reconstruction after January 20, 1983. Use of a 3-minute average was proposed in paragraph 2.5, "Test Methods and Procedures" in Subpart Na, rather than as amendments to Reference Method 9. This was done because 3-minute average opacity values are considered appropriate for and are intended to be applicable only for BOPF shop emissions. In this way, Method 9 as it applies to other sources is not affected by this rulemaking. This approach is consistent with the intended use of the test methods in Appendix A (40 CFR Part 60). The intent is detailed in the introduction to Appendix A, which states, in part:

> Within each standard of performance, a section titled 'Test Methods and Procedures' is provided to (1) identify the test methods applicable to the facility subject to the respective standard and (2) identify any special instructions or conditions to be followed when applying a method to the respective facility. Such instructions . . . are to be used either in addition to, or as a substitute for, procedures in a reference method.

Therefore, it is appropriate to alter—after analysis and public comment—the data reduction procedures for BOPF visible emission observations within the provisions of Subpart Na.

Several commenters also questioned the scientific reliability of the proposed 3-minute averages for Reference Method 9 opacity computations of visible emissions from BOPF's. The commenters contended that the modified averaging procedure will produce average opacity values that are less accurate and more subject to error than the 6-minute opacity values. The commenters stated that the proposed secondary standards require the improper use of Reference Method 9 for observing roof monitor visible emissions because the method was originally promulgated for observation of stacks, with specified data reduction procedures for 6-minute averages. The commenters stated that quantitative conclusions regarding the accuracy of the method were valid only for emissions from stacks. One commenter also maintained that modifications to Method 9 should be evaluated thoroughly to determine the accuracy and precision of any deviations and recommended that Method 9, unmodified, be used for the proposed regulation or that the proposed roof monitor opacity standards be deleted until an appropriate method is developed.

We share the commenters' concerns that knowledge of the precision and accuracy of a test method—and consideration of these factors for the public record—is important in developing and enforcing standards. Prior to responding to these concerns, it is appropriate to review the general procedure followed to establish a standard of performance and to understand the role of the test method to establish and determine compliance with the standard. Typically, a standard is expressd as a numerical emission limit that quantitifies the performance of BDT for emission control. A data base is gathered to establish an emission limit that is achievable for the emission source being regulated. The data base is obtained with either an existing or new test method that has been devised for the pollutant and source being regulated. If the method used to develop the data base differs from the method that would be used to determine compliance, the mathematical relationship between these methods must be known. In either case, the test method is proposed and promulgated according to the procedures outlined in section 307(d) of the Clean Air Act as amended is found either in Appendix A or in the subparts of 40 CFR Part 60. In the proposed and final standards, the accuracy and precision of the test method are documented and considered carefully.

When the visible emission standards were developed for BOPF's, a large number of visible emission observations were gathered according to the procedures of Reference Method 9. These data, which consist of more than 100 hours of observations, indicate that plumes from the roof monitors of BOPF shops are of short duration and that the performance of BDT for controlling these emissions is best characterized with an average opacity value based on a shorter, 3-minute averaging period instead of the 6-minute averaging period specified in the data reduction procedures contained in paragraph 2.5 of the reference method.

Therefore, a visible emission standard was proposed that would be based on the BOPF visible emission data base and on average opacity values calculated from 12 consecutive 15-second visible emission observations recorded by following the procedures of Reference Method 9. The proposed and final performance test procedures are also based on observing and recording visible emissions with Reference Method 9 and on calculating a 3-minute opacity average from the visible emission data.

Before 3-minute rather than 6-minute averages were proposed, the question of whether 3-minute averages are less accurate or precise than 6-minute averages was addressed. (Note that the accuracy and precision of 6-minute averages have been established and are not an issue here.) This involved analyzing and comparing the frequency of occurrence of differences between Method 9 observations (observer mean) and mean values calculated from transmissometer readings (instrument mean) for both 3- and 6-minute averaging periods. This analysis, which was included in the docket prior to proposal (II-B-92), is based on a July 1976 report that also was included in the docket prior to proposal (II-A-22). The results of this analysis are summarized in Table 2-3 of the BID for the final standards.

The results are reported as the percentage of the total number of measurements that fall within a particular range of observer error. For example, 36.5 percent of the total number of 3-minute averages calculated for the smoke generator black smoke had an observer error of between 0 and 5 percent opacity. Note that only positive errors are reported in the table. Examination of this table reveals that the distribution of errors for 3-minute averaging is about the same as for 6-minute averaging (e.g., for generator black smoke, 36.5 percent of the caluclated 3-minute averages had an observer error of 0 to 5 percent opacity as compared to 35.3 percent of the calculated 6-minute averages). Thus, the average opacities calculated on a 3-minute basis are no more subject to error than the average opacities calculated on a 6-minute basis.

With regard to the applicability of Method 9 to plumes from both stacks and roof monitors, a review of opacity theory demonstrates that quantitative conclusions about the accuracy and precision are equally valid for each. The major factors influencing plume opacity are: particle characteristics (particle size distribution and refractive index), particulate concentration, the background against which the emissions are viewed, the observer's position relative to the sun, and the light path length through the emission plume. Particle characteristics and particulate

concentration are determined by the process operation and the emission control technology. In the steel industry, plumes are released at elevated points such as stacks and roof monitors. As a result, the background for reading the opacity of visible emissions is the same for both types of sources, generally consisting of sky, horizon, or other structures. Thus, the ability to read opacity of visible emissions from roof monitors compared to the ability to read visible emissions from stacks is not influenced by background.

While the geometry of stacks and roof monitors does differ, Reference Method 9 explicitly accounts for opacity readings from roof monitors. Stacks are generally circular, and, as a result, the path length through the plume is essentially the same in all directions. Roof monitors tend to be rectangular with a long and short dimension. The light path length through the plume is different depending on whether the observer sights along the long dimension or the short dimension. When the opacity of visible emissions from roof monitors is read, paragraph 2.1 of Reference Method 9 specifically requires that observations be taken approximately perpendicular to the long dimension of the roof monitor (i.e., across the short dimension of the plume), which ensures that observed opacity is minimized. When the visible emission standards for BOPF's were developed, visible emission observations were taken from existing furnace shops with typical roof monitor designs. We have no data or other information that indicates that future roof monitor designs would be modified to cause plume path length, and thus observed opacity, to increase. Thus, the effect of path length on opacity was taken into account during development of the standards, and paragraph 2.1 of Reference Method 9 ensures that compliance with the standards is determined by reading plumes across the shorter path length.

The position of the visible emission observer with respect to the sun and the plume does affect perceived opacity due to the light-scattering effects of plumes. However, this light-scattering interference is nullified as the observer is positioned with his back to the sun as described in paragraph 2.1 of the Reference Method. This paragraph provides explicit instructions that position the observer with respect to both stacks and rectangular openings such as roof monitors. Thus, the effect of position on opacity is taken into account during development of visible emission standards.

The ability to read the opacity of visible emissions, therefore, does not depend on whether these emissions are released from stacks or roof monitors. Reference Method 9 is as applicable to plumes from roof monitors as it is to plumes from stacks.

After proposal of Subpart Na, statistical analyses of visible emission observations recently taken from roof monitors and stacks were performed to validate this conclusion further. These analyses are summarized in a memorandum entitled "Opacity Error for Different Averaging Times" (IV–B–6), which reports the results of statistical analyses of visible emissions from fugitive emission sources. The fugitive emission data were obtained mostly from iron and steel sources with BOPF shops and roof monitors being major contributors to the data base.

One statistical analysis examined the precision of observations of the opacity of a fugitive emission plume made simultaneously by two visible emission observers. For average opacity values calculated with a 6-minute averaging period, the standard deviation was 2.1 percent opacity with 93 percent of the runs having a difference between observer readings less than or equal to 7.5 percent opacity. For average opacity values calculated with a 3-minute averaging period, the standard deviation was essentially the same—2.4 percent opacity with 92 percent of the runs having a difference between observer readings less than or equal to 7.5 percent opacity. This analysis of visible emission observations of fugitive emissions therefore supports the conclusion that between-observer precision is the same for average opacity values calculated with 3- and 6-minute averaging periods.

As shown in Table 2–4 of the BID for the final standards, the stack standard devations range from 4.3 to 9.8 percent for 3- and 6-minute averages compared to the 2.1 percent and 2.4 percent reported above for the fugitive sources. Thus, it is conlcuded that the variability between observers in reading opacity from roof monitors is similar to that between observers reading opacity from stacks.

In summary, the 3-minute average was selected because it better characterizes the brief duration of BOPF visible emissions. We conclude that the public was afforded a sufficient opportunity to comment. We also conclude that Reference Method 9 is valid and scientifically reliable for application to BOPF shop roof monitors. In addition, the scientific reliability of the 3-minute average, as compared to the 6-minute average, was considered and analyzed for public review prior to proposal of the standards. Further analysis confirms that no significant difference exists between the accuracy and precision of 3-minute averages and the accuracy and precision of 6-minute averages. Consequently, no changes were made in the final rules regarding the use of a 3-minute data reduction procedure for determining compliance with visible emission standards by Reference Method 9.

Best Demonstrated Technology for Bottom-Blown Furnaces

One commenter criticized the selection of the proposed roof monitor opacity limit for bottom-blown furnaces in that the level of the proposed standards does not reflect BDT. In support of his contention, the commenter pointed to the failure of the system to achieve 90 percent capture on a consistent basis during the emission testing program due to mechanical problems (e.g., bell damper failures). The commenter also alleged that the secondary emission control system was poorly designed and maintained. As an alternative to selecting the Republic system as BDT for controlling secondary emissions from bottom-blown furnaces, the commenter recommended that a new regulatory alternative be considered for bottom-blown furnace control. The suggested alternative would consist of a furnace enclosure with hot metal addition and tapping hoods exhausted to a collection device capable of handling 600,000 acfm or the gas volumes handled by the control systems for top-blown furnaces, as demonstrated at the Bethlehem and J&L plants.

The opacity limit proposed for bottom-blown vessels was consistent with data for bottom-blown furnaces that were available at proposal. The effect of the commenter's recommendations would be to establish an emission limit at a level that has not been observed in practice for bottom-blown furnaces. it is agreed that the performance of controls on other sources, such as top-blown furnaces, suggests that better performance should be achievable for bottom-blown furnaces and raises doubt as to whether the proposed limits reflect the performance of BDT. The commenter also correctly implied that caputre and control of emissions from these vessels has not been demonstrated at a level consistent with top-blown vessels. A more stringent limit based on transfer of technology was not considered warranted in the case of bottom-blown vessels because of the wide range of conditions over which the vessels

operate and the correspondingly wide range of emissions from the vessels. Based on this comment and further review, it has been determined that better control will likely become available before the next 4-year review of the primary and secondary standards and that the proposed standards, if promulgated, would probably not reflect BDT. In particular, it should be noted that revised State regulations applicable to existing bottom-blown BOPF's that have been adopted pursuant to the requirements of 40 CFR Part 52 are much more stringent than the proposed standards. Because of these findings, the proposed roof-monitor opacity limit for bottom-blown vessels is being withdrawn from the final rules.

The requirement for limiting the opacity of visible emissions produced by hot metal transfer and skimming in bottom-blown furnace shops, however, is being retained. There are no significant process differences between hot metal transfer and skimming in bottom-blown furnace shops as opposed to top-blown furnace shops. Likewise, equipment used to perform these processes are not necessarily different in bottom-blown versus top-blown shops. Therefore, it is EPA's judgment that there is no significant difference in emission potential, either controlled or uncontrolled. For the above reasons, the roof monitor opacity limit for hot metal transfer and skimming in top-blown furnace shops is extended to apply to hot metal transfer and skimming in bottom-blown furnace shops. The provisions of Subpart Na, § 60.145a, allow the owner or operator of an affected facility to suspend shop operations not subject to Subpart Na during compliance testing. These provisions provide a means of avoiding interference from bottom-blown furnace emissions when compliance testing of hot metal transfer and skimming operations is conducted. By similar reasoning, the proposed concentration and opacity standards for secondary emission collection devices in bottom-blown furnace shops also are retained.

Withdrawal of the roof monitor opacity standard does require the development and consideration of a revised Regulatory Alternative II, the alternative selected as the basis of the proposed standards. With the deletion of the bottom-blown furnace roof monitor opacity standard, Regulatory Alternative II consists of BDT capture and collection controls for secondary emissions from top-blown furnaces, in addition to BDT capture and collection controls for hot metal transfer stations and skimming stations used with bottom-blown or top-blown furnaces. Withdrawal of the roof monitor opacity standards for bottom-blown furnaces would not affect the environmental, energy, or economic impacts estimated for the proposed standards. No impact would result because industry growth forecasts for the period 1981 through 1985 (upon which the impacts were based) project only the expansion of existing top-blown furnace capacity. Consequently, Regulatory Alternative II remains the alternative selected as the basis of the promulgated standards.

Concentration Standard for Secondary Emission Collection Device

One commenter criticized the level of the proposed mass emission limit of 23 mg/dscm (0.010 gr/dscf) for secondary emission collection devices, asserting that the standard did not reflect the performance level achievable for baghouses, which is BDT for this application. The commenter argued that a properly designed, operated, and maintained baghouse controlling emissions from hot metal transfer, skimming, and other operations can achieve an outlet emission rate of 0.005 gr/dscf.

The numerical emission limit of 0.010 gr/dscf proposed for secondary emission collection devices is based on the data available at the time of proposal. The data base for the emission limit, as proposed, includes data from hot metal transfer, partial building evacuation for BOPF's, and full-cycle data for electric arc furnaces (EAF's). Other operations that generate secondary BOPF emissions are not included in the data base. While the commenter correctly stated that certain operations can be controlled to achieve an emission rate of 0.005 gr/dscf, control of all pertinent operations has not been demonstrated adequately for BOPF's at that level.

The data supporting the proposed standard do not support a lower limit. It is agreed that new data, coupled with the transfer of technology from EAF's, might support the lower limit recommended by the commenter. However, without the benefit of public comment and because it is not clear whether other data reflect technology different from the data on which the 0.010-gr/dscf limit is based, the final rules do not revise the standard for secondary emission collection devices. Revision of the standard to reflect the higher performance level will be considered during the next 4-year review of Subparts N and Na.

Roof-Mounted Electrostatic Precipitators

One commenter questioned the conclusion that performance of RMESP's may be equivalent to or better than BDT for secondary emission collection when no data were available to assess RMESP performance. The commenter also questioned why a Japanese RMESP was not evaluated to support the proposed standard. This commenter pointed out that a baghouse can handle secondary emissions containing hard-to-precipitate kish particles and significant amounts of fine particulate emitted in large bursts more efficiently than can an RMESP. Although the commenter supported the proposed RMESP waiver for innovative technology, he suggested that the conclusion that the RMESP may be equivalent to (or better than) BDT at a lower cost should be verified.

Section 111(j) of the Clean Air Act provides that an owner or operator of an affected facility may request a waiver from one or more requirements of the standards to encourage the use of the innovative control system. For an owner or operator to obtain a waiver, there must be findings that the technology has not been demonstrated adequately and that it has either a substantial likelihood of achieving greater emission reduction than required by the NSPS or of achieving equivalent emission reduction at lower cost (including energy and nonair environmental costs). Once a waiver has been issued, its terms must include: (1) Assurance that the source emissions will not prevent attainment and maintenance of national ambient air quality standards (NAAQS's); (2) assurance that the technology will function properly; (3) a time limit for testing the technology not to exceed 7 years from issuance or 4 years from startup, or until the technology proves unworkable; and (4) a restriction to that portion of the source on which the technology is used.

The commenter is correct in noting that no data were available to quantify the performance, costs, and other impacts associated with the use of RMESP's. However, as indicated in the proposed rulemaking, there were qualitative indications that RMESP's could be at least as efficient as, and more cost effective than, capture hoods ducted to a particulate collection device, which is the technololgy on which the numerical standard is based. Some of this qualitative information was obtained from RMESP's in Japan. Unfortunately, the Japanese companies using the RMESP's would not permit the quantitative evaluation of their control technologies.

EPA had proposed to exempt RMESP's from the limits for a secondary control device, based on a judgment that an RMESP that met only the roof monitor opacity standard "would most likely be as good or better than BDT" (48 FR 2667, col. 3). EPA now believes that such a judgment is premature. In particular, such as RMESP might have a greater flow volume, and thus greater emissions, than BDT. EPA is therefore not promulgating any such exemption.

EPA recognizes that it may be difficult to test compliance with the mass emission limit in § 60.142a(a)(1) (23 mg/dscm) using Method 5 as prescribed by § 60.144a(a)(4), when an RMESP is used. If such cases arise, source owners or operators may be able to demonstrate to EPA's satisfaction by other means that the source is in compliance with the standard, under 40 CFR 60.8(a)(4). Means of demonstrating compliance might include opacity observations, observations of plume volume, limited mass test data, engineering evaluation of control system effectiveness, or some combination thereof.

Under the terms of any waiver granted, provisions would be included to ensure that any RMESP installed to comply with the NSPS would be designed and operated properly. Data collected during the term of the waiver would be used to verify RMESP performance and costs. Should the performance and costs be demonstrated as equivalent to or better than BDT, the inclusion of provisions specific to RMESP's may be considered during the next 4-year review of Subpart Na.

Fume Suppression Systems

Two commenters pointed out that, while the proposed standards do not require the use of a specific technology to meet the proposed emission limits, a steel producer could experience difficulties in permit approval if the producer desired to implement a technology not examined or discussed in the preamble or BID for the proposed or promulgated rule. In this regard, both commenters pointed to fume suppression, a relatively new technology, which could provide the potential for eliminating or reducing the need for particulate capture techniques. One commenter stated that the cost to implement and operate this technology can be substantially less than for other control alternatives, with fume suppression providing an equivalent performance. Accordingly, the commenters recommended that this technology be examined as a viable alternative control technique.

Data regarding fume suppression were not available when Volume I of the BID was being prepared. Since proposal, however, new information and data have been obtained to document the performance and cost of this system. These data indicate the fume suppression systems may provide performance equivalent to that of other control alternatives at a lower cost.

Suppression techniques reduce iron oxide fuming above molten metal or slag baths by inhibiting oxidation of the iron at the surface of the bath. Oxidation is inhibited by blanketing the bath surface with flame, steam, wet sand, or wet slag. To date, these techniques have been applied experimentally to: (1) Blast furnace iron tapping, (2) blast furnace slag tapping, (3) open hearth tapping, (4) electric furnace tapping, (5) hot metal transfer, (6) BOPF charging, (7) BOPF tapping, and (8) BOPF lance hole emissions.

Detailed test data to quantify the performance of suppression techniques on facilities regulated by 40 CFR Part 60, Subpart N or Na, are not yet available. However, preliminary data quantifying the performance of flame suppression (a type of fume suppression) on a BOPF hot metal transfer station at U.S. Steel's Gary plant indicate that opacity is reduced significantly with the use of flame suppression. These data are provided in Table 2–2 of the BID for the final standards. Thus, it appears that flame suppression is capable of achieving emission reduction at least equal to requirements of the proposed regulation during hot metal transfer.

Moreover, because fume suppression eliminates the need for hot metal transfer capture and collection devices, emission reductions may be achieved at costs significantly below those of the BDT on which the standards are based. The cost effectiveness (dollars per ton of particulate matter removed) of the fume suppression technique applied to secondary emissions from hot metal transfer operations is estimated at $633/ton. This can be compared to a cost effectiveness of $3,100/ton for a baghouse collecting only hot metal transfer emissions. Based on consideration of the preliminary performance data and costs of fume suppression, an owner or operator may choose to install this system to control hot metal transfer emissions. The standards of performance for hot metal transfer stations are expressed as numerical emission limits and do not preclude the use of any control technology, so long as it can achieve compliance with the numerical limit.

Additionally, an innovative technology waiver may be granted to an owner or operator desiring to install a fume suppression system. Under the terms of an innovative technology waiver, the owner or operator would be granted an extended time period to meet the roof monitor visible emission standards. Because fume suppression systems eliminate the need for additional collection equipment, they are exempt from the mass and opacity standards for secondary emission collection devices. Provisions would be included in any waiver to ensure that a fume suppression system installed to meet the NSPS would be disigned and operated properly. Data collected during the term of the waiver would be used to document the performance and costs of fume suppression for particulate emissions control. Should the performance and costs be equivalent to or better than BDT, the inclusion of provisions specific to fume suppresion systems would be considered during the next 4-year review of Supart Na.

The final standards also contain a definition for fume suppression systems. A fume suppression system is defined as "the equipment comprising any system used to inhibit the generation of emissions from steelmaking facilities by means of an inert gas, flame, or steam blanket applied to the surface of molten iron or steel."

Information Requirement Impacts

The final standards for primary and secondary emissions (Subparts N and Na) require no reports in addition to those required under the General Provisions of 40 CFR Part 60. The General Provisions contain notification requirements, which enable the Agency to keep abreast of facilities subject to the standards; contain requirements for the conduct and reporting of initial performance tests; and require reports of excess emissions. Analysis of these reporting requirements indicates they are both necessary and reasonable, considering the savings in time and resources required for effective enforcement. In the absence of these reporting requirements, effective enforcement of the regulation would require frequent individual inspections and tests.

The Paperwork Reduction Act (PRA) of 1980 (Pub. L. 96–511) requires clearance from the Office of Management and Budget (OMB) of certain public reporting and recordkeeping requirements before promulgation of this rulemaking. Information collection requirements associated with this regulation (those included in 40 CFR Part 60, Subpart A, Subpart N, and Subpart Na) have been approved by OMB under the provisions of the PRA of 1980, 44 U.S.C. 3501 *et seq.*

and have been assigned OMB control number 2060-0029.

Regulatory Flexibility Analysis

The Regulatory Flexibility Act of 1980 requires the identification of potentially adverse impacts of Federal regulations upon small business entities. The Act specifically requires the completion of a regulatory flexibility analysis in those instances where small business impacts are possible. Determination of the need to perform a regulatory flexibility analysis is based upon the consideration of three factors: (1) The maximum size of a small business; (2) the number of small businesses affected; and (3) the expected economic impacts. These standards are not subject to the Regulatory Flexibility Act of 1980 because no small businesses will be affected. No impacts on small governments or small organizations are anticipated because they also will not be affected. This determination is discussed in the preamble and BID for the proposed standards.

Docket

The docket is an organized and complete file of all the information considered in the development of this rulemaking. The docket is a dynamic file because material is added throughout the rulemaking development. The docket system is intended to allow members of the public and industries involved in the rulemaking to identify and locate documents readily so they can participate effectively in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards and responses to significant comments, the contents of the docket will serve as the record in case of judicial review, except for interagency review materials [section 307(d)(7)(A)].

Miscellaneous

The effective date of this regulation is January 2, 1986. 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.

The promulgation of these standards was preceded by a review of the standards of performance for BOPF's (40 CFR Part 60, Subpart N), which was completed in 1979 (44 FR 17460, March 21, 1979). The review of the primary standard resulted in the conclusion that secondary emissions from BOPF's represent a major air pollution source. Clarifying revisions to the primary standard were also recommended. In addition, publication of these promulgated standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies, in accordance with section 117.

This regulation will be reviewed 4 years from the date of promulgation as required by the Clean Air Act. This review will include an assessment of such factors as the need for integration with other programs, the existence of alternative methods, enforceability, improvements in emission control technology, and reporting requirements.

Section 317 of the Clean Air Act requires the Administrator to prepare an economic impact assessment of "revisions (of new source performance standards) which the Administrator determines to be substantial . . ." [section 317(a)]. An economic analysis of the standard was prepared for the proposed rulemaking. ["Standards Support and Environmental Impact Statement, Volume I: Proposed Standards of Performance for Basic Oxygen Process Furnances" (EPA-450/3-82-005a)]. The nationwide economic impacts and the aggregated cost effectivenes of the secondary emission control standards have not been revised since proposal.

Under Executive Order 12291, a regulation considered "major" is subject to the requirement of a Regulatory Impact Analysis. This regulation is not "major" because: (1) The national annualized compliance costs, including capital charges resulting from the standards, total less than $100 million; (2) the amended standards do not cause a major increase in prices or production costs; and (3) the standards do not cause significant adverse effects on domestic competition, employment, investment, productivity, innovation, or competition in foreign markets.

This regulation was submitted to OMB for review as required by Executive Order 12291. Any comments from OMB and any response to those comments are included in Docket A-79-6. The docket is available for public inspection at EPA's Central Docket Section, West Tower Lobby, Gallery 1, Waterside Mall, 401 M Street, SW., Washington, DC 20460.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that the proposed rule will not have a significant economic impact on a substantial number of small entities.

List of Subjects in 40 CFR Part 60

Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements, Incorporation by reference, Basic oxygen process furnaces.

Dated: December 22, 1985.

Lee M. Thomas,

Administrator

PART 60—[AMENDED]

40 CFR Part 60 is amended as follows:

1. The authority citation for 40 CFR Part 60 continues to read as follows:

Authority: Secs. 101, 111, 114, 116, 301, Clean Air Act as amended (42 U.S.C. 7401, 7411, 7414, 7416, 7601).

2. The title of 40 CFR Part 60, Subpart N, is revised to read as follows:

Subpart N—Standards of Performance for Primary Emissions from Basic Oxygen Process Furnances for Which Construction is Commenced After June 11, 1973

3. In § 60.141, paragraph (a) is revised, existing paragraphs (b) and (c) are deleted, and new paragraphs (b), (c) and (d) are added to read as follows:

§ 60.141 Definitions.

* * * * *

(a) "Basic oxygen process furnace" (BOPF) means any furnace with a refractory lining in which molten steel is produced by charging scrap metal, molten iron, and flux materials or alloy additions into a vessel and introducing a high volume of oxygen-rich gas. Open hearth, blast, and reverberatory furnaces are not included in this definition.

(b) "Primary emissions" means particulate matter emissions from the BOPF generated during the steel production cycle and captured by the BOPF primary control system.

(c) "Primary oxygen blow" means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel or through tuyeres in the bottom or through the bottom and sides of the vessel. This definition does not include any additional or secondary oxygen blows made after the primary blow or the introduction of nitrogen or other inert gas through tuyeres in the bottom or bottom and sides of the vessel.

(d) "Steel production cycle" means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used),

tapping, and deslagging. This definition applies to an affected facility constructed, modified, or reconstructed after January 20, 1983. For an affected facility constructed, modified, or reconstructed after June 11, 1973, but on or before January 20, 1983, "steel production cycle" means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), and tapping.

4. In § 60.142, the introductory text of paragraph (a) is revised and paragraphs (b) and (c) are added to read as follows:

§ 60.142 Standard for particulate matter.

(a) Except as provided under paragraph (b) of this section, 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 discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(1) * * *

(2) * * *

(b) For affected facilities constructed, modified, or reconstructed after January 20, 1983, the following limits shall apply:

(1) On or after the date on which the performance test under § 60.8 is required to be completed, no owner or operator of an affected facility for which open hooding is the method for controlling primary emissions shall cause to be discharged to the atmosphere any gases that:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf), as measured for the primary oxygen blow.

(ii) Exit from a control device not used solely for the collection of secondary emissions, as defined in § 60.141a, and exhibit 10 percent opacity or greater, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(2) On or after the date on which the performance test required by § 60.8 is completed, no owner or operator of an affected facility for which closed hooding is the method for controlling primary emissions shall cause to be discharged into the atmosphere any gases that:

(i) Contain particulate matter in excess of 68 mg/dscm (0.030 gr/dscf), as measured for the primary oxygen blow.

(ii) Exit from a control device not used solely for the collection of secondary emissions, as defined in § 60.141a, and exhibit 10 percent opacity or greater, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(c) On and after the date on which the performance test required by § 60.8 is completed, each owner or operator of an affected facility subject to paragraph (b) of this section shall operate the primary gas cleaning system during any reblow in a manner identical to operation during the primary oxygen blow.

5. In § 60.143, paragraphs (b)(2) and (c) are revised to read as follows:

§ 60.143 Monitoring of operations.

(b) * * *

(1) * * *

(2) A monitoring device for the continual measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of the design water supply pressure. The monitoring device's pressure sensor or pressure tap must be located close to the water discharge point. The Administrator must be consulted for approval in advance of selecting alternative locations for the pressure sensor or tap.

* * * * *

(c) Any owner or operator subject to the requirements of paragraph (b) of this section shall report to the Administrator, on a semiannual basis, all measurements over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the mass standards under § 60.142(a)(1), (b)(1)(A) or (b)(2)(A). The accuracy of the respective measurements, not to exceed the values specified in paragraphs (b)(1) and (b)(2) of this section, may be taken into consideration when determining the measurement results that must be reported.

6. In § 60.144, paragraph (b) is revised to read as follows:

§ 60.144 Test methods and procedures.

* * * * *

(b) For Method 5, the sampling time shall be as follows:

(1) For affected facilities that commenced construction, modification, or reconstruction on or before January 20, 1983, the sampling for each run shall continue for an integral number of steel production cycles with total duration of at least 60 minutes. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping. The minimum sample volume shall be at least 1.5 dscm (53 dscf). Shorter sampling times and smaller sample volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(2) For affected facilities that commence construction, modification, or reconstruction after January 20, 1983, the sampling for each run shall continue for an integral number of primary oxygen blows, with total duration of at least 60 minutes. The minimum sample volume shall be at least 1.5 dscm (53 dscf). Shorter sampling times and smaller sample volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

* * * * *

7. Sections 60.143 and 60.144 are amended to include the following statement at the end of each section:

(Approved by the Office of Management and Budget under control number 2060–0029)

8. By adding a new Subpart Na as follows:

Subpart Na—Standards of Performance for Secondary Emissions From Basic Oxygen Process Steelmaking Facilities for Which Construction Is Commenced After January 20, 1983

Sec.

Subpart Na—Standards of Performance for Secondary Emissions From Basic oxygen Process Steelmaking Facilities for Which Construction Is Commenced After January 20, 1983

§ 60.140a Applicability and designation of affected facilities.

(a) The provisions of this subpart apply to the following affected facilities in an iron and steel plant: top-blown BOPF's and hot metal transfer stations and skimming stations used with bottom-blown or top-blown BOPF's.

(b) This subpart applies to any facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after January 20, 1983.

(c) Any BOPF subject to the provisions of this subpart is subject to those provisions of Subpart N of this Part applicable to affected facilities commencing construction, modification or reconstruction after January 20, 1983.

§ 60.141a Definitions.

All terms in this subpart not defined below are given the same meaning as in the Clean Air Act as amended or in Subpart A of this part.

"Basic Oxygen process furnace" (BOPF) means any furnace with a refractory lining in which molten steel is produced by charging scrap metal, molten iron, and flux materials or alloy additions into a vessel and by introducing a high volume of oxygen-rich gas. Open hearth, blast, and reverberatory furnaces are not included in this definition.

"Bottom-blown furnace" means any BOPF in which oxygen and other combustion gases are introduced to the bath of molten iron through tuyeres in the bottom of the vessel or through tuyeres in the bottom and sides of the vessel.

"Fume suppression system" means the equipment comprising any system used to inhibit the generation of emissions from steelmaking facilities with an inert gas, flame, or steam blanket applied to the surface of molten iron or steel.

"Hot metal transfer station" means the facility where molten iron is emptied from the railroad torpedo car or hot metal car to the shop ladle. This includes the transfer of molten iron from the torpedo car or hot metal car to a mixer (or other intermediate vessel) and from a mixer (or other intermediate vessel) to the ladle. This facility is also known as the reladling station or ladle transfer station.

"Primary oxygen blow" means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel. This definition does not include any additional, or secondary, oxygen blows made after the primary blow.

"Primary emission control system" means the combination of equipment used for the capture and collection of primary emissions (e.g., an open hood capture system used in conjunction with a particulate matter cleaning device such as an electrostatic precipitator or a closed hood capture system used in conjunction with a particulate matter cleaning device such as a scrubber).

"Primary emissions" means particulate matter emissions from the BOPF generated during the steel production cycle which are captured by, and do not thereafter escape from, the BOPF primary control system.

"Secondary emission control system" means the combination of equipment used for the capture and collection of secondary emissions (e.g., (1) an open hood system for the capture and collection of primary and secondary emissions from the BOPF, with local hooding ducted to a secondary emission collection device such as a baghouse for the capture and collection of emissions from the hot metal transfer and skimming station; or (2) an open hood system for the capture and collection of primary and secondary emissions from the furnace, plus a furnace enclosure with local hooding ducted to a secondary emission collection device, such as a baghouse, for additional capture and collection of secondary emissions from the furnace, with local hooding ducted to a secondary emission collection device, such as a baghouse, for the capture and collection of emissions from hot metal transfer and skimming station; or (3) a furnace enclosure with local hooding ducted to a secondary emission collection device such as a baghouse for the capture and collection of secondary emissions from a BOPF controlled by a closed hood primary emission control system, with local hooding ducted to a secondary emission collection device, such as a baghouse, for the capture and collection of emissions from hot metal transfer and skimming stations).

"Secondary emissions" means particulate matter emissions that are not captured by the BOPF primary control system, including emissions from hot metal transfer and skimming stations. This definition also includes particulate matter emissions that escape from openings in the primary emission control system, such as from lance hole openings, gaps or tears in the ductwork of the primary emission control system, or leaks in hoods.

"Skimming station" means the facility where slag is mechanically raked from the top of the bath of molten iron.

"Steel production cycle" means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel, including the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), tapping, and deslagging. Hot metal transfer and skimming operations for the next steel production cycle are also included when the hot metal transfer station or skimming station is an affected facility.

"Top-blown furnace" means any BOPF in which oxygen is introduced to the bath of molten iron by means of an oxygen lance inserted from the top of the vessel.

§ 60.142a Standards for particulate matter.

(a) Except as provided under paragraphs (b) and (c) of this section, on and after the date on which the performance test under § 60.8 is required to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any secondary emissions that:

(1) Exit from the BOPF shop roof monitor (or other building openings) and exhibit greater than 10 percent opacity during the steel production cycle of any top-blown BOPF or during hot metal transfer or skimming operations for any bottom-blown BOPF; except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(2) Exit from a control device used solely for the collection of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming for a top-blown or a bottom-blown BOPF and contain particulate matter in excess of 23 mg/dscm (0.010 gr/dscf).

(3) Exit from a control device used solely for the collecton of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming for a top-blown or a bottom-blown BOPF and exhibit more than 5 percent opacity.

(b) A fume suppression system used to control secondary emissions from an affected facility is not subject to paragraphs (a)(2) and (a)(3) of this section.

(c) A control device used to collect both primary and secondary emissions from a BOPF is not subject to paragraphs (a)(2) and (a)(3) of this section.

§ 60.143a Monitoring of operations.

(a) Each owner or operator of an affected facility shall install, calibrate, operate, and maintain a monitoring device that continually measures and records for each steel production cycle the various rates or levels of exhaust ventilation at each phase of the cycle through each duct of the secondary emission capture system. The monitoring device or devices are to be placed at locations near each capture point of the secondary emission capture system to monitor the exhaust ventilation rates or levels adequately, or in alternative locations approved in advance by the Administrator.

(b) If a chart recorder is used, the owner or operator shall use chart recorders that are operated at a minimum chart speed of 3.8 cm/hr (1.5 in./hr).

(c) All monitoring devices are to be certified by the manufacturer to be

accurate to within ±10 percent compared to EPA Reference Method 2. The owner or operator shall recalibrate and check the device(s) annually and at other times as the Administrator may require, in accordance with the written instructions of the manufacturer and by comparing the device against EPA Reference Method 2.

(d) Each owner or operator subject to the requirements of paragraph (a) of this section shall report on a semiannual basis all measurements of exhaust ventilation rates or levels over any 3-hour period that average more than 10 percent below the average rates or levels of exhaust ventilation maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the standard under § 60.142a (a)(2). The accuracy of the respective measurements, not to exceed the values specified in paragraph (c) of this section, may be considered when determining the measurement results that must be reported.

(e) If a scrubber primary emission control device is used to collect secondary emissions, the owner or operator shall report on a semiannual basis all measurements of exhaust ventilation rate over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the standard under § 60.142(a)(1).

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§ 60.144a Test methods and procedures.

(a) The reference methods in Appendix A of this part, except as provided under § 60.8(b) and as noted below, shall be used to determine compliance with § 60.142a as follows:

(1) Method 1 for sample and velocity traverses;

(2) Method 2 for volumetric flow rate;

(3) Method 3 for gas analysis;

(4) Method 5 for concentration of particulate matter and associated moisture content; and

(5) Method 9 for visible emissions except as provided in paragraph (b) of this section.

(b) For Method 9, the following instructions for recording observations and reducing data shall apply instead of Sections 2.4 and 2.5 of Method 9:

(1) Section 2.4. Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals. During the initial performance test conducted pursuant to § 60.8, observations shall be made and recorded in this manner for a minimum of three steel production cycles. During any subsequent compliance test, observations may be made for any number of steel production cycles, although, where conditions permit, observations will generally be made for a minimum of three steel production cycles.

(2) Section 2.5. Opacity shall be determined as an average of 12 consecutive observations recorded at 15-second intervals. For each steel production cycle, divide the observations recorded into sets of 12 consecutive observations. Sets need not be consecutive in time, and in no case shall two sets overlap. For each set of 12 observations, calculate the average by summing the opacity of 12 consecutive observations and dividing this sum by 12.

(c) For the sampling of secondary emissions by Method 5, the sampling for each run is to continue for a sufficient number of steel production cycles to ensure a total sample volume of at least 5.67 dscm (200 dscf) for each run. Shorter sampling times and smaller sample volumes, when necessitated by process variables or other factors, may be approved by the Administrator. Sampling is to be conducted only during the steel production cycle.

(d) For the monitoring and recording of exhaust ventilation rates or levels required by § 60.143a(a), the following instructions for Reference Method 2 shall apply:

(1) For devices that monitor and record the exhaust ventilation rate, compare velocity readings recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings at a point or points that would properly characterize the monitoring device's performance and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the two sets to determine whether the monitoring device velocity is within ±10 percent of the Method 2 average.

(2) For devices that monitor the level of exhaust ventilation and record only step changes when a set point rate is reached, compare step changes recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings at a point or points that would properly characterize the performance of the monitoring device and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the two sets to determine whether the monitoring device step change is within ±10 percent of the setpoint rate.

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§ 60.145a Compliance provisions.

(a) When determining compliance with mass and visible emission limits specified in § 60.142a(a)(2) and § 60.142a(a)(3), the owner or operator of a BOPF shop that normally operates two furnaces with overlapping cycles may elect to operate only one furnace. If an owner or operator chooses to shut down one furnace, he shall be allowed a reasonable time period to adjust his production schedule before the compliance tests are conducted. The owner or operator of an affected facility may also elect to suspend shop operations not subject to this subpart during compliance testing.

(b) During compliance testing for mass and visible emission standards, if an owner or operator elects to shut down one furnace in a shop that normally operates two furnaces with overlapping cycles, the owner or operator shall operate the secondary emission control system for the furnace being tested at exhaust ventilation rates or levels for each duct of the secondary emission control system that are appropriate for single-furnace operatin. Following the compliance test, the owner or operator shall operate the secondary emission control system at exhaust ventilation rates or levels for each duct of the system that are no lower than 90 percent of the exhaust ventilation values established during the most recent compliance test.

(c) For the purpose of determining compliance with visible and mass emission standards, a steel production cycle begins when the scrap or hot metal is charged to the vessel (whichever operation occurs first) and terminates 3 minutes after slag is emptied from the vessel into the slag pot. Consecutive steel production cycles are not required for the purpose of determining compliance. Where a hot metal transfer or skimming station is an affected facility, the steel production cycle also includes the hot metal transfer or skimming operation for the next steel production cycle for the affected vessel. Visible emission observations for both hot metal transfer and skimming operations begin with the start of the operation and terminate 3 minutes after completion of the operation.

(d) For the purpose of determining compliance with visible emission standards specified in § 60.142a(a)(1) and (a)(3), the starting and stopping

times of regulated process operations shall be determined and the starting and stopping times of visible emissions data sets shall be determined accordingly.

(e) To determine compliance with § 60.142a(a)(1), select the data sets yielding the highest and second highest 3-minute average opacities for each steel production cycle. Compliance is achieved if the highest 3-minute average for each cycle observed is less than 20 percent and the second highest 3-minute average is 10 percent or less.

(f) To determine compliance with § 60.142(a)(2), determine the concentration of particulate matter in exhaust gases exiting the secondary emission collection device with Reference Method 5. Compliance is achieved if the concentration of particulate matter does not exceed 23 mg/dscm (0.010 gr/dscf).

(g) To determine compliance with § 60.142a(a)(3), construct consecutive 3-minute averages for each steel production cycle. Compliance is achieved if no 3-minute average is more than 5 percent.

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