in the Dockets Management Branch (HFA-305), Food and Drug Administration, Room 4-62, 5600 Fishers Lane, Rockville, MD 20857, from 9 a.m. to 4 p.m., Monday through Friday.

The agency has determined under 21 CFR 25.24(d)(1)(i) that this action is of a type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessement nor an environmental impact statement is required.

List of Subjects

21 CFR Part 510

Administrative practice and procedure, Animal drugs, Labeling, Reporting and recordkeeping requirements.

21 CFR Part 520

Animal drugs.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs and redelegated to the Center for Veterinary Medicine, Parts 510 and 520 are amended as follows:

PART 510—NEW ANIMAL DRUGS

1. The authority citation for 21 CFR Part 510 continues to read as follows:

Authority: Secs. 512, 701(a) (21 U.S.C. 360b, 371(a)); 21 CFR 5.10 and 5.83.

2. Section 510.600 is amended in paragraph (c)(1) by alphabetically adding the new entry "Elite Chemical Corp., Inc." and in paragraph (c)(2) by numerically adding the new entry "055025" to read as follows:

§ 510.600 Names, addresses, and drug labeler codes of sponsors of approved applications.

* * * * *

(c) * * *

(1) * * *

Firm name and address	Drug labeler code
* * * *	*
Elite Chemical Corp., Inc., P.O. Box 1947, Norcross, GA 30091	055025
* * * *	*

(2) * * *

Drug labeler code	Firm name and address
*	* * * *
055025	Elite Chemical Corp., Inc., P.O. Box 1947, Norcross, GA 30091.
*	* * * *

PART 520—ORAL DOSAGE FORM NEW ANIMAL DRUGS NOT SUBJECT TO CERTIFICATION

3. The authority citation for 21 CFR Part 520 continues to read as follows:

Authority: Sec. 512(i), 82 Stat. 347 (21 U.S.C. 360b(i)); 21 CFR 5.10 and 5.83.

4. Section 520.580 is amended by revising paragraph (b)(1) to read as follows:

§ 520.580 Dichlorophene and toluene capsules.

* * * * *

(b) *Sponsor.* (1) For single dose only, see 000010, 000115, 000842, 000856, 010888, 011536, 011614, 015563, 017135, 023851, 049968, 050906, and 055025 in § 510.600(c) of this chapter.

* * * * *

Dated: February 7, 1989.

Richard H. Teske,

Deputy Director, Center for Veterinary Medicine.

[FR Doc. 89-3382 Filed 2-13-89; 8:45 am]

BILLING CODE 4160-01-M

DEPARTMENT OF COMMERCE

Patent and Trademark Office

37 CFR Part 10

[Docket No. 80866-9013]

Requests for Reconsideration in Patent and Trademark Office Disciplinary Proceedings

AGENCY: Patent and Trademark Office, Commerce.

ACTION: Final rule.

SUMMARY: This final rule sets forth an amendment to 37 CFR 10.156. The purpose of the amendment is to prescribe a date on which the decision of the Commissioner of Patents and Trademarks in a Patent and Trademark (PTO) disciplinary proceeding becomes final agency action for purposes of judicial review, and to provide for one request for reconsideration or modification of such decision by a party.

EFFECTIVE DATE: April 1, 1989.

FOR FURTHER INFORMATION CONTACT: Harris A. Pitlick by telephone at (703) 557-4035 or by mail marked to his attention and addressed to Box 8, Commissioner of Patents and Trademarks, Washington, DC 20231.

SUPPLEMENTARY INFORMATION: Present rules do not explicitly provide for requests for reconsideration or modification of Commissioner's decisions in appeals from initial decisions of administrative law judges in PTO disciplinary proceedings. 37 CFR 10.156 presently provides that such a Commissioner's decision is a final agency action.

In a recent case, *Klein v. Peterson*, 6 USPQ 2d 1556 (D.D.C. 1988), a first decision of the Commissioner was withdrawn and ultimately replaced with a second decision. The respondent sought judicial review of the first decision under 35 U.S.C. 32 after its finality had already been withdrawn and then sought judicial review of the second decision. The authority of the Commissioner to, in effect, reconsider his decision in a disciplinary proceeding was challenged in the cited case. The district court held that since there was no express statutory authority proscribing the Commissioner from reconsidering the first decision, there was implicit authority to do so consistent with long-standing precedent in the area of federal administrative law.

While *Klein* confirmed that the Commissioner has inherent authority to reconsider a decision, at least before an appeal has been noted, the PTO believes that a rule explicitly providing for a time in which requests for reconsideration may be made by a party and a date certain for when Commissioner's decisions in disciplinary proceedings become final will both promote greater certainty in this area of disciplinary proceeding practice and eliminate the possibility of multiple appeals. The final rule is not intended to preclude the Commissioner from *sua sponte* reconsidering or modifying a decision in a disciplinary proceeding at any time where conditions warrant and a respondent's due process rights are not violated, consistent with long-standing federal administrative law precedent.

A notice of proposed rulemaking was published in the **Federal Register** on October 3, 1988 (53 FR 38740) and the *Official Gazette* on October 25, 1988 (1095 O.G. 44). Interested parties were requested to submit written comments on or before December 1, 1988. No comments were received.

Other Considerations

The rule change is in conformity with the requirements of the Regulatory Flexibility Act (Pub. L. 96-354), Executive Orders 12291 and 12612 and the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq.

The General Counsel has certified to the Chief Counsel for Advocacy, Small Business Administration that the rule change is not expected to have a significant adverse economic impact on a substantial number of small entities (Regulatory Flexibility Act, Pub. L. 96–354) because in merely codifying the inherent right of the PTO to reconsider its decisions *sua sponte*, the rule extends the right to each party in a PTO disciplinary proceeding to seek reconsideration.

The Patent and Trademark Office has determined that this rule change is not a major rule under Executive Order 12291. The annual effect on the economy will be less than $100 million. There will be no major increases in costs or prices for consumers, individual industries, Federal, State or local government agencies, or geographic regions. There will be no adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States based enterprises to compete with foreign-based enterprises in domestic or export markets.

The Patent and Trademark Office has also determined that this notice has no Federalism implications affecting the relationship between the National government and the States as outlined in Executive Order 12612.

This rule change does not contain a collection of information subject to the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

List of Subjects in 37 CFR Part 10

Administrative practice and procedure, Courts, Inventions and patents, Lawyers, Trademarks.

For the reasons set out in the preamble and under the authority granted to the Commissioner of Patents and Trademarks by 35 U.S.C. 6, the Patent and Trademark Office amends 37 CFR Part 10 as follows:

PART 10—REPRESENTATION OF OTHERS BEFORE THE PATENT AND TRADEMARK OFFICE

1. The authority citation for 37 CFR Part 10 would continue to read as follows:

Authority: 5 U.S.C. 500; 15 U.S.C. 1123; 35 U.S.C. 6, 31, 32, 41.

2. Section 10.156 is amended by revising paragraph (a) and adding new paragraph (c) to read as follows:

§ 10.156 Decision of the Commissioner.

(a) An appeal from an initial decision of the administrative law judge shall be decided by the Commissioner. The Commissioner may affirm, reverse or modify the initial decision or remand the matter to the administrative law judge for such further proceedings as the Commissioner may deem appropriate. Subject to paragraph (c) of this section, a decision by the Commissioner does not become a final agency action in a disciplinary proceeding until 20 days after it is entered. In making a final decision, the Commissioner shall review the record or those portions of the record as may be cited by the parties in order to limit the issues. The Commissioner shall transmit a copy of the final decision to the Director and to the respondent.

* * * * *

(c) A single request for reconsideration or modification of the Commissioner's decision may be made by the respondent or the Director if filed within 20 days from the date of entry of the decision. Such a request shall have the effect of staying the effective date of the decision. The decision by the Commissioner on the request is a final agency action in a disciplinary proceeding and is effective on its date of entry.

Dated: January 11, 1989.

Donald J. Quigg,

Assistant Secretary and Commissioner of Patents and Trademarks.

[FR Doc. 89–3465 Filed 2–13–89; 8:45 am]

BILLING CODE 3510-16-M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL-3468-4]

Standards of Performance for New Stationary Sources; Amendments to Test Methods and Procedures

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: On February 19, 1988 (53 FR 5082), EPA proposed amendments to the test methods and procedures sections of the subparts in 40 CFR Part 60 to consolidate all test methods and procedures necessary to determine compliance with the applicable standards or related monitoring requirements and to clarify certain procedures. Today's action promulgates these amendments.

EFFECTIVE DATE: February 14, 1989.

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. Courts 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 EPA to enforce these requirements.

ADDRESSES: Docket No. A-87-15, containing information considered by EPA in developing the promulgated rule, is available for public inspection and copying between 8:00 a.m. and 3:30 p.m., Monday through Friday, at EPA's Central Docket Section, South Conference Center, Room 4, 401 M Street SW., Washington, DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Roger T. Shigehara, Emission Measurement Branch (MD-19), Technical Support Division, U.S. EPA, Research Triangle Park, NC 27711, telephone (919) 541-1058.

SUPPLEMENTARY INFORMATION:

I. The Rulemaking

The test methods and procedures section of each subpart has been revised primarily to clarify the section by consolidating all procedures that pertain to one measurement (e.g., particulate matter concentrations) under one paragraph, to delete repetitions of methods already referenced within a cited method (e.g., Methods 1, 2, and 3 are referenced by Method 5 and, therefore, have not been listed again), and to separate alternative methods from reference methods. In addition, other changes have been made for consistency from one subpart or one section to another, procedures that were overlooked in the promulgation for requirements already in the subparts have been included, and technical errors have been corrected. Major amendments besides clarifications are listed below:

1. *Section 60.2:* Since the standards are based on reference methods, the applicable subpart rather than Appendix A is being used to define the reference methods. The title of Appendix A is being revised from "Reference Methods" to "Test Methods" in another rulemaking action to allow the inclusion of alternative methods in Appendix A.

2. *Section 60.8 (b) and (e):* Certain phrases or requirements are repeated in each subpart or in a number of subparts. Since they are generally applicable to all subparts, these phrases and requirements have been incorporated into the General Provisions.

3. *Section 60.44a:* Lignite fuel subject to the 340 ng/J standard is being added to the equation and a clarifying footnote is being added to the table.

4. *Sections 60.46 and 60.48a:* The use of F_c factors has been incorporated into the procedures. This change was the result of comments received during proposal.

5. *Section 60.54:* A procedure for Method 3 for a facility without a wet scrubber is being added. The grab-sampling technique of Method 3 is also being added.

6. *Sections 60.93, 60.123, and 60.133:* Sampling rate is being changed to sample volume.

7. *Sections 60.165, 60.175, 60.185:* The requirement for compressing the recorder scale during the performance evaluation test is being deleted.

8. *Sections 60.166, 60.176 and 60.186:* The specification for monitoring system drift not to exceed 2 percent of span value which is in Subpart P and overlooked in Subparts Q and R is being added. In addition, dry basis measurements of the SO_2 concentration are being specified.

Subparts Db, J, EE, MM, QQ, RR, SS, TT, WW, and FFF are not being amended at this time. It has been determined that Subparts K, Ka, HHH, JJJ, and KKK require no amendments.

This rulemaking does not impose emission measurement requirements beyond those specified in the current regulations, nor does it change any emission standard. Rather, the rulemaking would simply clarify and in some instances add a procedure associated with emission measurement or process monitoring requirements that would apply irrespective of this rulemaking.

II. Public Participation

The amendments were proposed in the **Federal Register** on February 19, 1988 (53 FR 5082). To provide interested persons the opportunity for oral presentation of data, views, or arguments concerning the proposed amendments, a public hearing was scheduled for April 4, 1988, at the Research Triangle Park, North Carolina, but was not held because no one wished to make an oral presentation. The public comment period was from February 19, 1988, to May 4, 1988. Three comment letters were received.

III. Significant Comments and Changes to the Proposed Amendments

The three comment letters on the proposed amendments were from industry and a utility *ad hoc* group, and all comments concerned only § 60.8, Subpart D (Fossil-Fuel Fired Steam Generators), and Subpart Da (Electric Utility Steam Generating Units). There were no comments on the amendments made to the other 39 subparts.

All three commenters objected to the withdrawal of Methods 6A and 6B primarily because no clear justification was given. The primary reason for the proposed withdrawal of Methods 6A and 6B for emission performance tests and continuous monitoring relative accuracy tests is due to the slightly greater variability of the F_c factor than the F_d factor (6 percent vs. 3 percent). Both Methods 6A and 6B are based on the F_c factor.

The first commenter suggested that if the difference between the F_c and F_d factors was of concern, ultimate analysis of coal samples could be used to prove the appropriateness of the F_c factor. After considering the commenter's suggestion, EPA has decided to allow the use of Methods 6A and 6B as alternative methods with one restriction. If the average F_c factor in Method 19 is used and when the emission rate is from 0.97 to 1.00 of the emission standard or the relative accuracy is from 17 and 20 percent, then a check of the acceptability of the F_c factor is made.

This same commenter suggested that Method 8 and Method 7D be designated as alternatives to Method 6. In section 2.1 of Method 6, Method 8 is designated as an acceptable alternative to Method 6 provided that a heated filter is placed between the probe and isopropanol impinger. Since this applies to wherever Method 6 is used, it is unnecessary to repeat its acceptability as an alternative in § 60.46(d)(3). Method 7D cannot be added without going through the rulemaking process. The Agency plans to consider this action in the near future.

The second commenter stated that the proposed amendment to § 60.8(e)(1) could be made clearer by referencing appropriate sections of Method 1. The Agency feels that paragraph (e)(1)(i), which states "constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures," is sufficiently clear to give the necessary intent. In the case of particulate matter, Methods 1, 2, and 5 are the applicable procedures, which contain criteria and procedures for ensuring that measurements of flow and emission rates are accurate. The Agency agrees that paragraph (e)(1)(ii) could be made clearer. It has been revised as follows: "providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures."

This same commenter suggested that § 60.45(f) can be shortened by referencing section 3 of Method 19. The Agency agrees and plans to revise this paragraph under a separate action.

This commenter also asked whether the expressions "The owner or operator may use" and "at the sole discretion of the owner and operator" have the same impact to EPA. Both expressions mean the same thing. Only the source owner or operator may choose to use the alternative methods for determining compliance. However, it does not mean that only the owner or operator may use the alternative methods. Alternative methods are those that have been shown to produce results adequate for determining compliance and may have no bias, a positive bias, or a slightly negative bias. The intent of such expression was to indicate that control agencies should not mandate the use of alternative methods if the owner or operator chooses not to use them. However, the alternative status does not preclude the control agency from using the method for compliance purposes; it only means that an agency must consider positive biases, if any (some alternative methods have been shown not to exhibit any bias), when using alternative methods.

The second commenter suggested that reference to § 60.46 in §§ 60.a (c)(4) and (d)(1) be deleted. The reference was made to § 60.46 to indicate that only F_d factors should be used. However, with the changes allowing the use of the F_c factors, the reference has been deleted.

This same commenter stated that the first equation in § 60.43a(h)(2) has no meaning and therefore is unnecessary. The EPA realizes that the first equation would not be applicable. The equation was included to satisfy the requirements of section 111(a) of the Clean Air Act, as amended.

Two of the commenters pointed out several typesetting errors. These have been noted.

As a result of an EPA internal review, the proposed addition of a minimum sampling time of 120 minutes to §§ 60.386(b)(3) and 60.675(b)(3) has been rescinded because an averaging time was not considered essential for determining compliance in these subparts.

IV. Administrative

A. Docket

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

B. Office of Management and Budget Reviews

Under Executive Order 12291, EPA is required to judge whether a regulation is a "major rule" and, therefore, subject to the requirements of a regulatory impact analysis. The Agency has determined that this regulation would result in none of the adverse economic effects set forth in section 1 of the Order as grounds for finding a regulation to be a "major rule." The rulemaking does not impose emission measurement requirements beyond those specified in the current regulations, but instead, provides simplification and clarification in the test methods and procedures sections of the regulation that would apply irrespective of this rulemaking. The Agency has, therefore, concluded that this regulation is not a "major rule" under Executive Order 12291.

As required by Executive Order 12291, this Final Rule has been reviewed by the Office of Management and Budget (OMB). Any written OMB comments to EPA and EPA's response to these comments will be available for inspection in the public docket for this rulemaking.

C. Regulatory Flexibility Act Compliance

The Regulatory Flexibility Act (RFA) of 1980 requires the identification of potentially adverse impacts of Federal regulations upon small business entities. The Act specifically requires the completion of an RFA in those instances where small business impacts are possible. Because this rulemaking imposes no adverse economic impacts, an RFA has not been conducted.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this promulgated rule will not have any economic impact on small entities because no changes are being made to testing requirements.

List of Subjects in 40 CFR Part 60

Air pollution, Electric utility steam generating units, Gas turbines, Incinerators, Incorporation by reference, Intergovernmental relations, Phosphate fertilizer, Portland cement plants, Primary copper smelters, Primary lead smelters, Primary zinc smelters, Reporting and recordkeeping requirements, and Wool fiberglass insulation.

Date: February 2, 1989.

Jack Moore,

Acting Administrator.

40 CFR Part 60 is amended as follows:

PART 60—[AMENDED]

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

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

§60.2 [Amended]

2. Section 60.2 (Subpart A) is amended by revising the definition of "Reference method" to read, " 'Reference method' means any method of sampling and analyzing for an air pollutant as specified in the applicable subpart."

§60.8 [Amended]

3. In §60.8(b), the first sentence is amended by removing the word "on" before the number "(4)", revising the period at the end of the sentence to a comma, and by adding the following phrase, to read as follows:

(b) * * * or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors.

4. Section 60.8 is amended by adding the following sentence to the end of paragraph (e)(1) to read as follows:

(e) * * *

(1) * * * This includes (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.

§60.45 [Amended]

5. Section 60.45(c)(1) is revised to read as follows:

(c) * * *

(1) Methods 6, 7, and 3, as applicable, shall be used for the performance evaluations of sulfur dioxide and nitrogen oxides continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3 are given in §60.46(d).

6. In §60.45(f)(3), the words "paragraph (d)" are revised to read "paragraph (a)".

7. Section 60.46 is revised to read as follows:

§60.46 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (d) of this section.

(b) The owner or operator shall determine compliance with the particulate matter, SO_2, and NO_x standards in §§60.42, 60.43, and 60.44 as follows:

(1) The emission rate (E) of particulate matter, SO_2, or NO_x shall be computed for each run using the following equation:

$E = CF_d\,(20.9)/(20.9 - \%\,O_2)$

E = emission rate of pollutant, ng/J (1b/million Btu).

C = concentration of pollutant, ng/dscm (1b/dscf).

$\%0_2$ = oxygen concentration, percent dry basis.

F_d = factor as determined from Method 19.

(2) Method 5 shall be used to determine the particular matter concentration (C) at affected facilities without wet flue-gas-desulfurization (FGD) systems and Method 5B shall be used to determine the particulate matter concentration (C) after FGD systems.

(i) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). The probe and filter holder heating systems in the sampling train may be set to provide a gas temperature no greater than 160±14 °C (320±25 °F).

(ii) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3 shall be used to determine the O_2 concentration ($\%O_2$). The O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate sample. If the grab sampling procedure is used, the O_2 concentration for the run shall be the arithmetic mean of all the individual O_2 sample concentrations at each traverse point.

(iii) If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 is used to locate the 12 O_2 traverse points.

(3) Method 9 and the procedures in §60.11 shall be used to determine opacity.

(4) Method 6 shall be used to determine the SO_2 concentration.

(i) The sampling site shall be the same as that selected for the particulate sample. The sampling location in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). The sampling time and sample volume for each sample run shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Two samples shall be taken during a 1-hour period, with each sample taken within a 30-minute interval.

(ii) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the O_2 concentration (%O_2). The O_2 sample shall be taken simultaneously with, and at the same point as, the SO_2 sample. The SO_2 emission rate shall be computed for each pair of SO_2 and O_2 samples. The SO_2 emission rate (E) for each run shall be the arithmetic mean of the results of the two pairs of samples.

(5) Method 7 shall be used to determine the NO_x concentration.

(i) The sampling site and location shall be the same as for the SO_2 sample. Each run shall consist of four grab samples, with each sample taken at about 15-minute intervals.

(ii) For each NO_x sample, the emission rate correction factor, grab sampling and analysis procedure of Method 3 shall be used to determine the O_2 concentration (%O_2). The sample shall be taken simultaneously with, and at the same point as, the NO_x sample.

(iii) The NO_x emission rate shall be computed for each pair of NO_x and O_2 samples. The NO_x emission rate (E) for each run shall be the arithmetic mean of the results of the four pairs of samples.

(c) When combinations of fossil fuels or fossil fuel and wood residue are fired, the owner or operator (in order to compute the prorated standard as shown in §§ 60.43(b) and 60.44(b)) shall determine the percentage (w, x, y, or z) of the total heat input derived from each type of fuel as follows:

(1) The heat input rate of each fuel shall be determined by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned.

(2) ASTM Methods D 2015–77 (solid fuels), D 240–76 (liquid fuels), or D 1826–77 (gaseous fuels) (incorporated by reference—see § 60.17) shall be used to determine the gross calorific values of the fuels. The method used to determine the calorific value of wood residue must be approved by the Administrator.

(3) Suitable methods shall be used to determine the rate of each fuel burned during each test period, and a material balance over the steam generating system shall be used to confirm the rate.

(d) The owner or operator may use the following as alternatives to the reference methods and procedures in this section or in other sections as specified:

(1) The emission rate (E) of particulate matter, SO_2 and NO_x may be determined by using the F_c factor, provided that the following procedure is used:

(i) The emission rate (E) shall be computed using the following equation:

$$E=C\,F_c\,(100/\%CO_2)$$

where:

E=emission rate of pollutant, ng/J (lb/million Btu).

C=concentration of pollutant, ng/dscm (lb/dscf).

$\%CO_2$=carbon dioxide concentration, percent dry basis.

F_c=factor as determined in appropriate sections of Method 19.

(ii) If and only if the average F_c factor in Method 19 is used to calculate E and either E is from 0.97 to 1.00 of the emission standard or the relative accuracy of a continuous emission monitoring system is from 17 to 20 percent, then three runs of Method 3 shall be used to determine the O_2 and CO_2 concentration according to the procedures in paragraph (b) (2)(ii), (4)(ii), or (5)(ii) of this section. Then if F_o (average of three runs), as calculated from the equation in Method 3, is more than ±3 percent than the average F_o value, as determined from the average values of F_d and F_c in Method 19, i.e., $F_{oa}=0.209\,(F_{da}/F_{ca})$, then the following procedure shall be followed:

(A) When F_o is less than 0.97 F_{oa}, then E shall be increased by that proportion under 0.97 F_{oa}, e.g., if F_o is 0.95 F_{oa}, E shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the emission standard.

(B) When F_o is less than 0.97 F_{oa} and when the average difference ($\bar{d}$) between the continuous monitor minus the reference methods is negative, then E shall be increased by that proportion under 0.97 F_{oa}, e.g., if F_o is 0.95 F_{oa}, E shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(C) When F_o is greater than 1.03 F_{oa} and when the average difference $\bar{d}$ is positive, then E shall be decreased by that proportion over 1.03 F_{oa}, e.g., if F_o is 1.05 F_{oa}, E shall be decreased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(2) For Method 5 or 5B, Method 17 may be used at facilities with or without wet FGD systems if the stack gas temperature at the sampling location does not exceed an average temperature of 160 °C (320 °F). The procedures of sections 2.1 and 2.3 of Method 5B may be used with Method 17 only if it is used after wet FGD systems. Method 17 shall not be used after wet FGD systems if the effluent gas is saturated or laden with water droplets.

(3) Particulate matter and SO_2 may be determined simultaneously with the Method 5 train provided that the following changes are made:

(i) The filter and impinger apparatus in sections 2.1.5 and 2.1.6 of Method 8 is used in place of the condenser (section 2.1.7) of Method 5.

(ii) All applicable procedures in Method 8 for the determination of SO_2 (including moisture) are used:

(4) For Method 6, Method 6C may be used. Method 6A may also be used whenever Methods 6 and 3 data are specified to determine the SO_2 emission rate, under the conditions in paragraph (d)(1) of this section.

(5) For Method 7, Method 7A, 7C, 7D, or 7E may be used. If Method 7C, 7D, or 7E is used, the sampling time for each run shall be at least 1 hour and the integrated sampling approach shall be used to determine the O_2 concentration (%O_2) for the emission rate correction factor.

(6) For Method 3, Method 3A may be used.

§60.43a [Amended]

8. Section 60.43a(h)(1) is amended by revising both equations to read as follows:

$E_s=(340\times +520\,y)/100$ and
$\%P_s=10$

9. Section 60.43a(h)(2) is amended by:

a. Revising both equations to read as follows:

$E_s=(340\times +520\,y)/100$ and
$\%P_s=(10\times +30\,y)/100$

b. Revising the first term in the nomenclature list to read "E_s".

c. Revising the second term in the nomenclature list to read as follows:

$\%P_s$ is the percentage of potential sulfur dioxide emission allowed.

§60.44a [Amended]

10. Section 60.44a(a)(1). No_x emission limits table, is amended by:

a. Adding a footnote "2" to the end of the fifth item under "Fuel type"immediately after the word "furnace" to read "furnace[2]".

b. Revising the sixth item under "Fuel type" to read as follows:

Any fuel containing more than 25%, by weight, lignite not subject to the 340 ng/J heat input emission limit[2].

c. Adding a footnote "2" at the end of the table to read as follows:

[2] Any fuel containing less than 25%, by weight, lignite is not prorated but its percentage is added to the percentage of the predominant fuel.

11. Section 60.44a(c) is amended by:

a. Revising the equation to read as follows:

$E_n=[86\ w+130\times+210\ y+260\ z+340\ v]/100$

b. Revising the first term in the nomenclature list to read "E_n".

c. Moving the word "and" at the end of the term "y" to the end of the term "z" and adding the definition of the term "v" to the end of the nomenclature list to read as follows:

v is the percentage of total heat input delivered from the combustion of fuels subject to the 340 ng/J heat input standard.

§ 60.46a [Amended]

12. In § 60.46a(d)(3), the paragraph reference "(i)" is revised to read "(h)".

13. In § 60.46a(h), the phrase "sections 6.0 and 7.0 of Reference Method 19 (Appendix A)" is revised to read: "section 7 of Method 19."

14. Section 60.47a is amended by revising paragraphs (f), (h), (i) introductory text, and (i)(1), and (i)(2), and by adding a new paragraph (j) to read as follows:

§ 60.47a Emission monitoring.

* * * * *

(f) The owner or operator shall obtain emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement cannot be met with a continuous monitoring system, the owner or operator shall supplement emission data with other monitoring systems approved by the Administrator or the reference methods and procedures as described in paragraph (h) of this section.

* * * * *

(h) When it becomes necessary to supplement continuous monitoring system data to meet the minimum data requirements in paragraph (f) of this section, the owner or operator shall use the reference methods and procedures as specified in this paragraph. Acceptable alternative methods and procedures are given in pargraph (j) of this section.

(1) Method 6 shall be used to determine the SO_2 concentration at the same location as the SO_2 monitor. Samples shall be taken at 60-minute intervals. The sampling time and sample volume for each sample shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Each sample represents a 1-hour average.

(2) Method 7 shall be used to determine the NO_x concentration at the same location as the NO_x monitor. Samples shall be taken at 30-minute intervals. The arithmetic average of two consecutive samples represents a 1-hour average.

(3) The emission rate correction factor, integrated bag sampling and analysis procedure of Method 3 shall be used to determine the O_2 or CO_2 concentration at the same location as the O_2 or CO_2 monitor. Samples shall be taken for at least 30 minutes in each hour. Each sample represents a 1-hour average.

(4) The procedures in Method 19 shall be used to compute each 1-hour average concentration in ng/J (1b/million Btu) heat input.

(i) The owner or operator shall use methods and procedures in this paragraph to conduct monitoring system performance evaluations under § 60.13(c) and calibration checks under § 60.13(d). Acceptable alternative methods and procedures are given in paragraph (j) of this section.

(1) Methods 6, 7, and 3, as applicable, shall be used to determine O_2, SO_2, and NO_x concentrations.

(2) SO_2 or NO_x (NO), as applicable, shall be used for preparing the calibration gas mixtures (in N_2, as applicable) under Performance Specification 2 of Appendix B of this part.

* * * * *

(j) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 6, Method 6A or 6B (whenever Methods 6 and 3 data are used) or 6C may be used. Each Method 6B sample obtained over 24 hours represents 24 1-hour averages. If Method 6A or 6B is used under paragraph (i) of this section, the conditions under § 60.46(d)(1) apply; these conditions do not apply under paragraph (h) of this section.

(2) For Method 7, Method 7A, 7C, 7D, or 7E may be used. If Method 7C, 7D, or 7E is used, the sampling time for each run shall be 1 hour.

(3) For Method 3, Method 3A may be used if the sampling time is 1 hour.

15. Section 60.48a is amended by redesignating paragraph (d) as paragraph (f), by adding a new paragrah (d), and by revising paragraphs (a), (b), (c), and (e) to read as follows:

§ 60.48a Compliance determination test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the methods in Appendix A of this part or the methods and procedures as specified in this section, except as provided in § 60.8(b). Section 60.8(f) does not apply to this section for SO_2 and NO_x. Acceptable alternative methods are given in paragraph (e) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.42a as follows:

(1) The dry basis F factor (O_2) procedures in Method 19 shall be used to compute the emission rate of particulate matter.

(2) For the particular matter concentration, Method 5 shall be used at affected facilities without wet FGD systems and Method 5B shall be used after wet FGD systems.

(i) The sampling time and sample volume for each run shall be at least 120 minutes and 1.70 dscm (60 dscf). The probe and filter holder heating system in the sampling train may be set to provide an average gas temperature of no greater than 160±14 °C (320±25 °F).

(ii) For each particulate run, the emission rate correction factor, integrated or grab sampling and analysis procedures of Method 3 shall be used to determine the O_2 concentration. The O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate run. If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 is used to locate the 12 O_2 traverse points. If the grab sampling procedure is used, the O_2 concentration for the run shall be the arithmetic mean of all the individual O_2 concentrations at each traverse point.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator shall determine compliance with the SO_2 standards in § 60.43a as follows:

(1) The percent of potential SO_2 emissions ($\%P_s$) to the atmosphere shall be computed using the following equation:

$\%P_s=[(100-\%R_f)\ (100-\%R_g)]/100$

where:

$\%P_s$=percent of potential SO_2 emissions, percent.

$\%R_f$=percent reduction from fuel pretreatment, percent.

$\%R_g$=percent reduction by SO_2 control system, percent.

(2) The procedures in Method 19 may be used to determine percent reduction (%R_f) of sulfur by such processes as fuel pretreatment (physical coal cleaning, hydrodesulfurization of fuel oil, etc.), coal pulverizers, and bottom and flyash interactions. This determination is optional.

(3) The procedures in Method 19 shall be used to determine the percent SO_2 reduction (%R_g of any SO_2 control system. Alternatively, a combination of an "as fired" fuel monitor and emission rates measured after the control system, following the procedures in Method 19, may be used if the percent reduction is calculated using the average emission rate from the SO_2 control device and the average SO_2 input rate from the "as fired" fuel analysis for 30 successive boiler operating days.

(4) The appropriate procedures in Method 19 shall be used to determine the emission rate.

(5) The continuous monitoring system in § 60.47a (b) and (d) shall be used to determine the concentrations of SO_2 and CO_2 or O_2.

(d) The owner or operator shall determine compliance with the NO_x. standard in § 60.44a as follows:

(1) The appropriate procedures in Method 19 shall be used to determine the emission rate of NO_x.

(2) The continous monitoring system in § 60.47a (c) and (d) shall be used to determine the concentrations of NO_x and CO_2 or O_2.

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5 or 5B, Method 17 may be used at facilities with or without wet FGD systems if the stack temperature at the sampling location does not exceed an average temperature of 160 °C (320 °F). The procedures of §§ 2.1 and 2.3 of Method 5B may be used in Method 17 only if it is used after wet FGD systems. Method 17 shall not be used after wet FGD systems if the effluent is saturated or laden with water droplets.

(2) The F_c factor (CO_2) procedures in Method 19 may be used to compute the emission rate of particulate matter under the stipulations of § 60.46(d)(1). The CO_2 shall be determined in the same manner as the O_2 concentration.

* * * * *

16. Section 60.54 is revised to read as follows:

§ 60.54 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standard in § 60.52 as follows:

(1) The emission rate (c_{12}) of particulate matter, corrected to 12 percent CO_2, shall be computed for each run using the following equation:

$$c_{12} = c_s\,(12/\%CO_2)$$

where:

c_{12}=concentration of particulate matter, corrected to 12 percent CO_2, g/dscm (gr/dscf).

c_s=concentration of particulate matter, g/dscm (gr/dscf).

$\%CO_2$=CO_2 concentration, percent dry basis.

(2) Method 5 shall be used to determine the particulate matter concentration (c_s). The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3 shall be used to determine CO_2 concentration (%CO_2).

(i) The CO_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate run. If the particulate run has more than 12 traverse points, the CO_2 traverse points may be reduced to 12 if Method 1 is used to locate the 12 CO_2 traverse points. If individual CO_2 samples are taken at each traverse point, the CO_2 concentration (%CO_2) used in the correction equation shall be the arithmetic mean of all the individual CO_2 sample concentrations at each traverse point.

(ii) If sampling is conducted after a wet scrubber, an "adjusted" CO_2 concentration [$(\%CO_2)_{adj}$], which accounts for the effects of CO_2 absorption and dilution air, may be used instead of the CO_2 concentration determined in this paragraph. The adjusted CO_2 concentration shall be determined by either of the procedures in paragraph (c) of this section.

(c) The owner or operator may use either of the following procedures to determine the adjusted CO_2 concentration.

(1) The volumetric flow rates at the inlet and outlet of the wet scrubber and the inlet CO_2 concentration may be used to determine the adjusted CO_2 concentration [$(\%CO_2)_{adj}$] using the following equation:

$$(\%CO_2)_{adj} = (\%CO_2)_{di}\,(Q_{di}/Q_{do})$$

where:

$(\%CO_2)_{adj}$=adjusted outlet CO_2 concentration, percent dry basis.

$(\%CO_2)_{di}$=CO_2 concentration measured before the scrubber, percent dry basis.

Q_{di}=volumetric flow rate of effluent gas before the wet scrubber, dscm/min (dscf/min).

Q_{do}=volumetric flow rate of effluent gas after the wet scrubber, dscm/min (dscf/min).

(i) At the outlet, Method 5 is used to determine the volumetric flow rate (Q_{do}) of the effluent gas.

(ii) At the inlet, Method 2 is used to determine the volumetric flow rate (Q_{di}) of the effluent gas as follows: Two full velocity traverses are conducted, one immediately before and one immediately after each particulate run conducted at the outlet, and the results are averaged.

(iii) At the inlet, the emission rate correction factor, integrated sampling and analysis procedure of Method 3 is used to determine the CO_2 concentration [$(\%CO_2)_{di}$] as follows: At least nine sampling points are selected randomly from the velocity traverse points and are divided randomly into three sets, equal in number of points; the first set of three or more points is used for the first run, the second set for the second run, and the third set for the third run. The CO_2 sample is taken simultaneously with each particulate run being conducted at the outlet, by traversing the three sampling points (or more) and sampling at each point for equal increments of time.

(2) Excess air measurements may be used to determine the adjusted CO_2 concentration [$(\%CO_2)_{adj}$] using the following equation:

$$(\%CO_2)_{adj} = (\%CO_2)_{di}\,[(100 + \%EA_i)/(100 + \%EA_o)]$$

where:

$(\%CO_2)_{adj}$=adjusted outlet CO_2 concentration, percent dry basis.

$(\%CO_2)_{di}$=CO_2 concentration at the inlet of the wet scrubber, percent dry basis.

$\%EA_i$=excess air at the inlet of the scrubber, percent.

$\%EA_o$=excess air at the outlet of the scrubber, percent.

(i) A gas sample is collected as in paragraph (c)(1)(iii) of this section and the gas samples at both the inlet and outlet locations are analyzed for CO_2, O_2, and N_2.

(ii) Equation 3–1 of Method 3 is used to compute the percentages of excess air at the inlet and outlet of the wet scrubber.

17. Section 60.64 is revised to read as follows:

§ 60.64 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standard in § 60.62 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\,Q_{sd})/(P\,K)$$

where:

E=emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed.
c_s=concentration of particulate matter, g/dscm (g/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P=total kiln feed (dry basis) rate, metric ton/hr (ton/hr).
K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.

(3) Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(18) Section 60.73(a) is revised to read as follows:

§ 60.73 Emission monitoring.

(a) The source owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides (NO_x). The pollutant gas mixtures under Performance Specification 2 and for calibration checks under § 60.13(d) of this part shall be nitrogen dioxide (NO_2). The span value shall be 500 ppm of NO_2. Method 7 shall be used for the performance evaluations under § 60.13(c). Acceptable alternative methods to Method 7 are given in § 60.74(c).

* * * * *

19. Section 60.73(b) is amended by removing the word "short" wherever it occurs in the first and third sentences.

20. Section 60.74 is revised to read as follows:

§ 60.74 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the NO_x standard in § 60.72 as follows:

(1) The emission rate (E) of NO_x shall be computed for each run using the following equation:

$$E=(C_s\,Q_{sd})/(P\,K)$$

where:

E=emission rate of NO_x as NO_2, kg/metric ton (lb/ton) of 100 percent nitric acid.
C_s=concentration of NO_x as NO_2, g/dscm (lb/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P=acid production rate, metric ton/hr (ton/hr) or 100 percent nitric acid.
K=conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 7 shall be used to determine the NO_x concentration of each grab sample. Method 1 shall be used to select the sampling site, and the sampling point shall be the centroid of the stack or duct or at a point no closer to the walls than 1 m (3.28 ft). Four grab samples shall be taken at approximately 15-minute intervals. The arithmetic mean of the four sample concentrations shall constitute the run value (C_s).

(3) Method 2 shall be used to determine the volumetric flow rate (Q_{sd}) of the effluent gas. The measurement site shall be the same as for the NO_x sample. A velocity traverse shall be made once per run within the hour that the NO_x samples are taken.

(4) The methods of § 60.73(c) shall be used to determine the production rate (P) of 100 percent nitric acid for each run. Material balance over the production system shall be used to confirm the production rate.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 7, Method 7A, 7B, 7C, or 7D may be used. If Method 7C or 7D is used, the sampling time shall be at least 1 hour.

(d) The owner or operator shall use the procedure in § 60.73(b) to determine the conversion factor for converting the monitoring data to the units of the standard.

§ 60.84 [Amended]

21. In § 60.84(a), the third sentence is amended by removing the word "Reference" before the words "Methods 8"; and the fourth sentence is amended by adding the word "value" after the word "span".

22. In § 60.84(b), the first sentence and definition of CF in nomenclature list are amended by removing the word "short" before the word "ton" in the two places it occurs.

23. Section 60.84(d) is amended by revising the equation and nomenclature list to read as follows:

(d) * * *

$$E_s=(C_s S)/[0.265-(0.126\,\%O_2)-(A\,\%CO_2)]$$

where:

E_s=emission rate of SO_2, kg/metric ton (lb/ton) of 100 percent of H_2SO_4 produced.
C_s=concentration of SO_2, kg/dscm (lb/dscf).
S=acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H_2SO_4 produced.
$\%O_2$=oxygen concentration, percent dry basis.
A=auxiliary fuel factor,
=0.00 for no fuel.
=0.0226 for methane.
=0.0217 for natural gas.
=0.0196 for propane.
=0.0172 for No 2 oil.
=0.0161 for No 6 oil.
=0.0148 for coal.
=0.0126 for coke.
$\%CO_2$= carbon dioxide concentration, percent dry basis.

* * * * *

24. Section 60.85 is revised to read as follows:

§ 60.85 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the SO_2 acid mist, and visible emission standards in §§ 60.82 and 60.83 as follows:

(1) The emission rate (E) of acid mist or SO_2 shall be computed for each run using the following equation:

$$E=(C\,Q_{sd})/(P\,K)$$

where:

E=emission rate of acid mist or SO_2 kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.
C=concentration of acid mist or SO_2, g/dscm (lb/dscf).
Q_{sd}=volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
P=production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).
K=conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 8 shall be used to determine the acid mist and SO_2 concentrations (C's) and the volumetric

flow rate (Q_{sd}) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(3) Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.

(ii) The SO_2 or acid mist emission rate is calculated as described in § 60.84(d), substituting the acid mist concentration for C_s as appropriate.

25. Section 60.93 is revised to read as follows:

§ 60.93 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.92 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

26. Section 60.123 is revised to read as follows:

§ 60.123 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.122 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration during representative periods of furnace operation, including charging and tapping. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

27. Section 60.133 is revised to read as follows:

§ 60.133 Test methods and procedures.

(a) In conducting performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.132 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration during representative periods of charging and refining, but not during pouring of the heat. The sampling time and sample volume for each run shall be at least 120 minutes and 1.80 dscm (63.6 dscf).

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

§ 60.143 [Amended]

28. In § 60.143(b)(5), the reference "§ 60.13(b)(3)" is revised to read "§ 60.13(b)".

29. In § 60.143(c), the references "(b)(1)(A) or (b)(2)(A)" are revised to read "(b)(1)(i) or (b)(2)(i)".

30. Section 60.144 is revised to read as follows:

§ 60.144 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.142 as follows:

(1) The time-measuring instrument of § 60.143 shall be used to document the time and duration of each steel production cycle and each diversion period during each run.

(2) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 1.50 dscm (53 dscf). Sampling shall be discontinued during periods of diversions.

(i) 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. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately before tapping.

(ii) For affected facilities that commenced construction, modification, or reconstruction after January 20, 1983, the sampling for each run shall continue for an integral number of primary oxygen blows.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity. Observations taken during a diversion period shall not be used in determining compliance with the opacity standard. Opacity observations taken at 15-second intervals immediately before and after a diversion of exhaust gases from the stack may be considered to be consecutive for the purpose of computing an average opacity for a 6-minute period.

(c) To comply with § 60.143(c), the owner or operator shall use the monitoring devices of § 60.143(b) (1) and (2) during the particulate runs to determine the 3-hour averages of the required measurements.

31. Section 60.144a is amended by redesignating paragraphs (d)(1) and (2) as (c) (1) and (2) and by revising paragraphs (a), (b), (c) introductory text, and (d) to read as follows:

§ 60.144a Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.142a as follows:

(1) Start and end times of each steel production cycle during each run shall be recorded (see § 60.145a(c) and (d) for the definitions of start and end times of a cycle).

(2) Method 5 shall be used to determine the particulate matter

concentration. Sampling shall be conducted only during the steel production cycle and for a sufficient number of steel production cycles to obtain a total sample volume of at least 5.67 dscm (200 dscf) for each run.

(3) Method 9 and the procedures of § 60.11 shall be used to determine opacity, except sections 2.4 and 2.5 of Method 9 shall be replaced with the following instructions for recording observations and reducing data:

(i) *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.

(ii) *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) In complying with the requirements of § 60.143a(c), the owner or operator shall conduct an initial test as follows:

* * * * *

(d) To comply with § 60.143a (d) or (e), the owner or operator shall use the monitoring device of § 60.143a(a) to determine the exhaust ventilation rates or levels during the particulate matter runs and to determine a 3-hour average.

32. Section 60.154 is revised to read as follows:

§ 60.154 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter emission standards in § 60.152 as follows:

(1) The emission rate (E) of particulate matter for each run shall be computed using the following equation:

$$E=K(c_s\,Q_{sd})/S$$

where:

E=emission rate of particulate matter, g/kg (lb/ton) of dry sludge input.
c_s=concentration of particulate matter, g/dscm (g/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
S=charging rate of dry sludge during the run, kg/hr (lb/hr).
K=conversion factor, 1.0 g/g [4.409 lb^2/(g-ton)].

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(3) The dry sludge charging rate (S) for each run shall be computed using either of the following equations:

$$S=K_m\,S_m\,R_{dm}\,/\,\theta$$
$$S=K_v\,S_v\,R_{dv}\,/\,\theta$$

where:

S=charging rate of dry sludge, kg/hr (lb/hr).
S_m=total mass of sludge charged, kg (lb).
R_{dm}=average mass of dry sludge per unit mass of sludge charged, mg/mg (lb/lb).
θ=duration of run, min.
K_m=conversion factor, 60 min/hr.
S_v=total volume of sludge charged, m^3 (gal).
R_{dv}=average mass of dry sludge per unit volume of sludge charged, mg/liter (lb/ft^3).
K_v=conversion factor, 60×10^{-3} (liter-kg-min)/(m^3-mg-hr) [8.021 (ft^3-min)/(gal-hr)].

(4) The flow measuring device of § 60.153(a)(1) shall be used to determine the total mass (S_m) or volume (S_v) of sludge charged to the incinerator during each run. If the flow measuring device is on a time rate basis, readings shall be taken and recorded at 5-minute intervals during the run and the total charge of sludge shall be computed using the following equations, as applicable:

$$S_m = \sum_{i=1}^{n} Q_{mi}\,\theta_i$$

$$S_v = \sum_{i=1}^{n} Q_{vi}\,\theta_i$$

where:

Q_{mi}=average mass flow rate calculated by averaging the flow rates at the beginning and end of each interval "i", kg/min (lb/min).
Q_{vi}=average volume flow rate calculated by averaging the flow rates at the beginning and end of each interval "i", m^3/min (gal/min).
θ_i=duration of interval "i", min.

(5) Samples of the sludge charged to the incinerator shall be collected in nonporous jars at the beginning of each run and at approximately 1-hour intervals thereafter until the test ends, and "209 F. Method for Solid and Semisolid Samples" (incorporated by reference—see § 60.17) shall be used to determine dry sludge content of each sample (total solids residue), except that:

(i) Evaporating dishes shall be ignited to at least 103 °C rather than the 550 °C specified in step 3(a)(1).

(ii) Determination of volatile residue, step 3(b) may be deleted.

(iii) The quantity of dry sludge per unit sludge charged shall be determined in terms of mg/liter (lb/ft^3) or mg/mg (lb/lb).

(iv) The average dry sludge content shall be the arithmetic average of all the samples taken during the run.

(6) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

§§ 60.165, 60.175, and 60.185 [Amended]

33. Sections 60.165(b)(2)(i), 60.175(a)(2)(i), and 60.185(a)(2)(i) are amended by removing the second and third sentences.

34. In §§ 60.165(b)(2)(ii), 60.175(a)(2)(ii), and 60.185(a)(2)(ii), the words "Field Test for Accuracy (Relative)" are revised to read "Relative Accuracy Test Procedure", and the word "Reference" just before "Method 6" is removed.

35. Section 60.166 is revised to read as follows:

§ 60.166 Test methods and procedures.

(a) In conducting performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2) and visible emission standards in §§ 60.162, 60.163, and 60.164 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of § 60.165(b)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 6 hours, and the average SO_2 concentration shall be computed for the 6-hour period as in § 60.165(c). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

36. Section 60.176 is revised to read as follows:

§ 60.176 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2), and visible emission standards in §§ 60.172, 60.173, and 60.174 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of § 60.175(a)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 2 hours, and the average SO_2 concentration for the 2-hour period shall be computed as in § 60.175(b). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

37. Section 60.186 is revised to read as follows:

§ 60.186 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2), and visible emission standards in §§ 60.182, 60.183, and 60.184 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of § 60.185(a)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 2 hours, and the average SO_2 concentration for the 2-hour period shall be computed as in § 60.185(b). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

§§ 60.194 and 60.195 [Amended]

38. Section 60.195 is amended by redesignating § 60.195(a) as § 60.194(c) and § 60.195(b) as § 60.194(d).

39. Section 60.195 is revised to read as follows:

§ 60.195 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides and visible emission standards in §§ 60.192 and 60.193 as follows:

(1) The emission rate (E_p) of total fluorides from potroom groups shall be computed for each run using the following equation:

$$E_p = [(C_s\,Q_{sd})_1 + (C_s\,Q_{sd})_2]/(P\,K)$$

where:

E_p=emission rate of total fluorides from a potroom group, kg/Mg (lb/ton).

C_s=concentration of total fluorides, mg/dscm (mg/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=aluminum production rate, Mg/hr (ton/hr).

K=conversion factor, 10^6 mg/kg (453,600 mg/lb).

1=subscript for primary control system effluent gas.

2=subscript for secondary control system or roof monitor effluent gas.

(2) The emission rate (E_b) of total fluorides from anode bake plants shall be computed for each run using the following equation:

$$E_b = (C_s\,Q_{sd})/(P_e\,K)$$

where:

E_b=emission rate of total fluorides, kg/Mg (lb/ton) of aluminum equivalent.

C_s=concentration of total fluorides, mg/dscm (mg/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P_e=aluminum equivalent for anode production rate, Mg/hr (ton/hr).

K=conversion factor, 10^6 mg/kg (453,600 mg/lb).

(3) Methods 13A or 13B shall be used for ducts or stacks, and Method 14 for roof monitors not employing stacks or pollutant collection systems, to determine the total fluorides concentration (C_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 8 hours and 6.80 dscm (240 dscf) for potroom groups and at least 4 hours and 3.40 dscm (120 dscf) for anode bake plants.

(4) The monitoring devices of § 60.194(a) shall be used to determine the daily weight of aluminum and anode produced.

(i) The aluminum production rate (P) shall be determined by dividing 720 hours into the weight of aluminum tapped from the affected facility during a period of 30 days before and including the final run of a performance test.

(ii) The aluminum equivalent production rate (P_e) for anodes shall be determined as 2 times the average weight of anode produced during a representative oven cycle divided by the cycle time. An owner or operator may establish a multiplication factor other than 2 by submitting production records of the amount of aluminum produced and the concurrent weight of anodes consumed by the potrooms.

(5) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

§ 60.203 [Amended]

40. In § 60.203(b), the reference "§ 60.204(d)(2) is revised to read "§ 60.204(b)(3)".

41. Section 60.204 is revised to read as follows:

§ 60.204 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.202 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si}\,Q_{sdi}\right)/(P\,K)$$

where:

E=emission rate of total fluorides, g/metric ton (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point "i," mg/dscm (mg/dscf).

Q_{sdi} = volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).
N = number of emission points associated with the affected facility.
P = equivalent P_2O_5 feed rate, metric ton/hr (ton/hr).
K = conversion factor, 1000 mg/g (453,600 mg/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p R_p$$

where:
M_p = total mass flow rate of phosphorus-bearing feed, metric ton/hr (ton/hr).
R_p = P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.203(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

§ 60.213 [Amended]

42. In § 60.213(b), the reference "§ 60.214(d)(2)" is revised to read "§ 60.214(b)(3)".

43. Section 60.214 is revised to read as follows:

§ 60.214 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.212 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} Q_{sdi}\right)/(P K)$$

where

E = emission rate of total fluorides, g/metric ton (lb/ton) of equivalent P_2O_5 feed.
C_{si} = concentration of total fluorides from emission point "i," mg/dscm (mg/dscf).
Q_{sdi} = volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).
N = number of emission points associated with the affected facility.
P = equivalent P_2O_5 feed rate, metric ton/hr (ton/hr).
K = conversion factor, 1000 mg/g (453,600 mg/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p R_p$$

where:
M_p = total mass flow rate of phosphorus-bearing feed, metric ton/hr (ton/hr).
R_p = P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.213(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

§ 60.223 [Amended]

44. In § 60.223(b), the reference "§ 60.224(d)(2)" is revised to read "§ 60.224(b)(3)".

45. Section 60.224 is revised to read as follows:

§ 60.224 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.222 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} Q_{sdi}\right)/(P K)$$

where:

E = emission rate of total fluorides, g/metric ton (lb/ton) of equivalent P_2O_5 feed.
C_{si} = concentration of total fluorides from emission point "i," mg/dscm (mg/dscf).
Q_{sdi} = volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).
N = number of emission points associated with the affected facility.
P = equivalent P_2O_5 feed rate, metric ton/hr (ton/hr).
K = conversion factor, 1000 mg/g (453,600 mg/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p R_p$$

where:
M_p = total mass flow rate of phosphorus-bearing feed, metric ton/hr (ton/hr).
R_p = P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.223(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorported by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

§ 60.233 [Amended]

46. In § 60.233(b), the reference "§ 60.234(d)(2)" is revised to read "§ 60.234(b)(3)".

47. Section 60.234 is revised to read as follows:

§ 60.234 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standards in § 60.232 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E=\left(\sum_{i=1}^{N} C_{si}\, Q_{sdi}\right)/(P\, K)$$

where:

E=emission rate of total fluorides, g/metric ton (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point "i," mg/dscm (mg/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).

N=number of emission points in the affected facility.

P=equivalent P_2O_5 feed rate, metric ton/hr (ton/hr).

K=conversion factor, 1000 mg/g (453,600 mg/lb).

(2) Method 13A or 13b shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$P = M_p\, R_p$

where:

M_p total mass flow rate of phosphorus-bearing feed, metric ton/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.233(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_{p2}) of the feed.

§ 60.243 [Amended]

48. In § 60.243(b), the reference "60.244(f)(2)" is revised to read "60.244(c)(3)".

49. Section 60.244 is revised to read as follows:

§ 60.244 Test methods and procedures.

(a) The owner or operator shall conduct performance tests required in § 60.8 only when the following quantities of product are being cured or stored in the facility.

(1) Total granular triple superphosphate is at least 10 percent of the building capacity and

(2) Fresh granular triple superphosphate is at least 20 percent of the total amount of triple superphosphate or,

(3) If the provision in paragraph (a)(2) of this section exceeds production capabilities for fresh granular triple superphosphate, fresh granular triple superphosphate is equal to at least 5 days maximum production.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the total fluorides standard in § 60.242 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E=\left(\sum_{i=1}^{N} C_{si}\, Q_{sdi}\right)/(P\, K)$$

where:

E=emission rate of total fluorides, g/hr/metric ton (lb/hr/ton) of equivalent P_2O_5 stored.

C_{si}=concentration of total fluorides from emission point "i," mg/dscm (mg/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).

N=number of emission points in the affected facility.

P=equivalent P_2O_5 stored, metric tons (tons).

K=conversion factor, 1000 mg/g (453,600 mg/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$P=M_p\, R_p$

where:

M_p=amount of product in storage, metric ton (ton).

R_p=P_2O_5 content of product in storage, weight fraction.

(i) The accountability system of § 60.243(a) shall be used to determine the amount of product (M_p) in storage.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the product in storage.

§ 60.253 [Amended]

50. In § 60.253(b), the last line is amended by revising the reference "§ 60.13(b)(3)" to read "§ 60.13(b)".

51. Section 60.254 is revised to read as follows:

§ 60.254 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particular matter standards in § 60.252 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

52. Section 60.266 is revised to read as follows:

§ 60.266 Test methods and procedures.

(a) During any performance test required in § 60.8, the owner or operator shall not allow gaseous diluents to be added to the effluent gas stream after the fabric in an open pressurized fabric filter collector unless the total gas volume flow from the collector is accurately determined and considered in the determination of emissions.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the particulate matter standards in § 60.262 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=\left(\sum_{i=1}^{N} C_{si}\, Q_{sdi}\right)/(P\, K)$$

where:

E=emission rate of particulate matter, kg/MW-hr (1b/MW-hr).
n=total number of exhaust streams at which emissions is quantified.
c_{si}=concentration of particulate matter from exhaust stream "i", g/dscm (g/dscf).
Q_{sdi}=volumetric flow rate of effluent gas from exhaust stream "i", dscm/hr (dscf/hr).
P=average furnace power input, MW.
K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas, except that the heating systems specified in sections 2.1.2 and 2.1.6 are not to be used when the carbon monoxide content of the gas stream exceeds 10 percent by volume, dry basis. If a flare is used to comply with § 60.263, the sampling site shall be upstream of the flare. The sampling time shall include an integral number of furnace cycles.

(i) When sampling emissions from open electric submerged arc furnaces with wet scrubber control devices, sealed electric submerged arc furnaces, or semienclosed electric arc furnaces, the sampling time and sample volume for each run shall be at least 60 minutes and 1.80 dscm (63.6 dscf).

(ii) When sampling emissions from other types of installations, the sampling time and sample volume for each run shall be at least 200 minutes and 5.70 dscm (200 dscf).

(3) The measurement device of § 60.265(b) shall be used to determine the average furnace power input (P) during each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(5) The emission rate correction factor, integrated sampling procedure of Method 3 shall be used to determine the CO concentration. The sample shall be taken simultaneously with each particulate matter sample.

(d) During the particulate matter run, the maximum open hood area (in hoods with segmented or otherwise moveable sides) under which the process is expected to be operated and remain in compliance with all standards shall be recorded. Any future operation of the hooding system with open areas in excess of the maximum is not permitted.

(e) To comply with § 60.265 (d) or (f), the owner or operator shall use the monitoring devices in § 60.265 (c) or (e) to make the required measurements as determined during the performance test.

§ 60.273 [Amended]

53. Section 60.273(c) is revised to read as follows:

(c) A continuous monitoring system is not required on any modular, multiple-stack, negative-pressure or positive-pressure fabric filter if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer as follows: Visible emission observations shall be conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272(a) of this subpart.

54. Section 60.275 is amended by redesignating paragraph (c) as § 60.276(c), by revising paragraphs (a), (b), (d), (e), and (f), and by adding a new paragraph (c) to read as follows:

§ 60.275 Test methods and procedures.

(a) During performance tests required in § 60.8, the owner or operator shall not add gaseous diluent to the effluent gas after the fabric in any pressurized fabric collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(d) When emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also § 60.276(b)):

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of this subpart.

(c) When emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator shall use either or both of the following procedures to demonstrate compliance with § 60.272(a)(3):

(1) Determine compliance using the combined emissions.

(2) Shut down operation of facilities not subject to the provisions of this subpart during the performance test.

(d) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(e) The owner or operator shall determine compliance with the particulate matter standards in § 60.272 as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particular matter concentration and, if applicable, the volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.5 dscm (160 dscf) and, when a single EAF is sampled, the sampling time shall include an integral number of heats.

(2) When more then one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$C_{st}=[\sum_{i=1}^{n} C_{si}Q_{sdi})]/\sum_{i=1}^{n} Q_{sdi}$$

where:
c_{st}=average concentration of particulate matter, mg/dscm (gr/dscf).
c_{si}=concentration of particulate matter from control device "i", mg/dscm (gr/dscf).
n=total number of control devices tested.
Q_{sdi}=volumetric flow rate of stack gas from control device "i", dscm/hr (dscf/hr).

(3) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(4) To demonstrate compliance with § 60.272(a) (1), (2), and (3), the test runs shall be conducted concurrently, unless inclement weather interferes.

(f) To comply with § 60.274 (c), (f), (g), and (i), the owner or operator shall obtain the information in these paragraphs during the particulate matter runs.

* * * * *

§ 60.276 [Amended]

55. In § 60.276(b), the reference "§ 60.275(g)(2) or (g)(3)" is revised to read "§ 60.275(b)(2) or a combination of (b)(1) and (b)(2)".

§ 60.273a [Amended]

56. Section 60.273a(c) is revised to read as follows:

(c) A continuous monitoring system for the measurement of opacity is not required on modular, multiple-stack, negative-pressure or positive-pressure fabric filters if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer as follows: Visible emission observations are conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations will be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272a(a) of this subpart.

57. Section 60.275a is amended by redesignating paragraph (d) as § 60.276a(f), by revising paragraphs (a), (b), (c), (e), and (f), and by adding new paragraph (d) to read as follows:

§ 60.275a Test methods and procedures.

(a) During performance tests required in § 60.8, the owner or operator shall not add gaseous diluents to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(b) When emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also § 60.276a(e)):

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of this subpart.

(c) When emission from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator shall demonstrate compliance with § 60.272(a)(3) based on emissions from only the affected facility(ies).

(d) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(e) The owner or operator shall determine compliance with the particulate matter standards in § 60.272a as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.50 dscm (160 dscf) and, when a single EAF or AOD vessel is sampled, the sampling time shall include an integral number of heats.

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

$$C_{at}=[\sum_{i=1}^{n} C_{si}Q_{sdi})]/\sum_{i=1}^{n} Q_{sdi}$$

where:

c_{at}=average concentration of particulate matter, mg/dscm (gr/dscf).

c_{si}=concentration of particulate matter from control device "i", mg/dscm (gr/dscf).

n=total number of control devices tested.

Q_{sdi}=volumetric flow rate of stack gas from control device "i", dscm/hr (dscf/hr).

(3) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(4) To demonstrate compliance with § 60.272a(a) (1), (2), and (3), the test runs shall be conducted concurrently, unless inclement weather interferes.

(f) To comply with § 60.274a (c), (f), (g), and (h), the owner or operator shall obtain the information required in these paragraphs during the particulate matter runs.

* * * * *

§ 60.276a [Amended]

58. In 60.276a(e), the reference "§ 60.275a(h)(2) or (h)(3)" is revised to read "§ 60.275(b)(2) or a combination of (b)(1) and (b)(2)".

59. Section 60.285 is revised to read as follows:

§ 60.285 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.282(a) (1) and (3) as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure. The particulate concentration shall be corrected to the appropriate oxygen concentration according to § 60.284(c)(3).

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration. The gas sample shall be taken at the same time and at the same traverse points as the particulate sample.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator shall determine compliance with the particular matter standard in § 60.282(a)(2) as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=c_s Q_{sd}/BLS$$

where:

E=emission rate of particulate matter, g/kg (lb/ton) of BLS.

C_s=concentration of particulate matter, g/dsm (lb/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

BLS=black liquor solids (dry weight) feed rate, kg/hr (ton/hr).

(2) Method 5 shall be used to determine the particulate matter concentration (C_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used instead of acetone in the sample recovery.

(3) Process data shall be used to determine the black liquor solids (BLS) feed rate on a dry weight basis.

(d) The owner or operator shall determine compliance with the TRS standards in § 60.283, except § 60.283(a)(1)(vi) and (4), as follows:

(1) Method 16 shall be used to determine the TRS concentration. The TRS concentration shall be corrected to the appropriate oxygen concentration using the procedure in § 60.284(c)(3). The

sampling time shall be at least 3 hours, but no longer than 6 hours.

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration. The sample shall be taken over the same time period as the TRS samples.

(3) When determining whether a furnace is a straight kraft recovery furnace or a cross recovery furnace, TAPPI Method T.624 (incorporated by reference—see § 60.17) shall be used to determine sodium sulfide, sodium hydroxide, and sodium carbonate. These determinations shall be made 3 times daily from the green liquor, and the daily average values shall be converted to sodium oxide ($\mathrm{Nac_20}$) and substituted into the following equation to determine the green liquor sulfidity:

$$\mathrm{GLS} = 100\,\mathrm{CNa_2S}/(\mathrm{C_{NA2S}}+\mathrm{C_{NaOH}}+\mathrm{C_{Na2CO3}})$$

Where:

GLS=green liquor sulfidity, percent.

$\mathrm{C_{Na2S}}$=concentration of $\mathrm{Na_2S}$ as $\mathrm{Na_2O}$, mg/liter (gr/gal).

$\mathrm{C_{NaOH}}$=concentration of NaOH as $\mathrm{Na_2O}$, mg/liter (gr/gal).

$\mathrm{C_{Na2CO3}}$=concentration of $\mathrm{Na_2CO_3}$ as $\mathrm{Na_2O}$, mg/liter (gr/gal).

(e) The owner or operator shall determine compliance with the TRS standards in § 60.283(a)(1)(vi) and (4) as follows:

(1) The emission rate (E) of TRS shall be computed for each run using the following equation:

$$E=C_{TRS}\,F\,Q_{sd}/P$$

where:

E=emission rate of TRS, g/kg (lb/ton) of BLS or ADP.

C_{TRS}=average combined concentration of TRS, ppm.

F=conversion factor, 0.001417 g $\mathrm{H_2S/m^3}$ ppm (0.0844×10^{-6} lb $\mathrm{H_2S/ft^3}$ ppm).

Q_{sd}=volumetric flow rate of stack gas, dscm/hr (dscf/hr).

P=black liquor solids feed or pulp production rate, kg/hr (ton/hr).

(2) Method 16 shall be used to determine the TRS concentration (C_{TRS}).

(3) Method 2 shall be used to determine the volumetric flow rate (Q_{sd}) of the effluent gas.

(4) Process data shall be used to determine the black liquor feed rate or the pulp production rate (P).

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 205 °C (400 °F).

(2) For Method 16, Method 16A or 16B may be used if the sampling time is 60 minutes.

§ 60.292 [Amended]

60. In § 60.292(a)(2), the definition of "Y" is amended by revising the words "Decimal percent" to read "Decimal fraction" and revising the reference "§ 60.296(f)" to read "§ 60.296(b)".

61. Section 60.296 is revised to read as follows:

§ 60.296 Test methods and procedures.

(a) If a glass melting furnace with modified processes is changed to one without modified processes or if a glass melting furnace without modified processes is changed to one with modified processes, the owner or operator shall notify the Administrator at least 60 days before the change is scheduled to occur.

(b) When gaseous and liquid fuels are fired simultaneously in a glass melting furnace, the owner or operator shall determine the applicable standard under § 60.292(a)(2) as follows:

(1) The ratio (Y) of liquid fuel heating value to total (gaseous and liquid) fuel heating value fired in the glass melting furnaces shall be computed for each run using the following equation:

$$Y=(H_l\,L)/H_l\,L+H_g\,G)$$

where:

Y=decimal fraction of liquid fuel heating value to total fuel heating value.

H_l=gross calorific value of liquid fuel, J/kg.

H_g=gross calorific value of gaseous fuel, J/kg.

L=liquid flow rate, kg/hr.

G=gaseous flow rate, kg/hr.

(2) Suitable methods shall be used to determine the rates (L and G) of fuels burned during each test period and a material balance over the glass melting furnace shall be used to confirm the rates.

(3) American Society of Testing and Materials (ASTM) Method D 240–76 (liquid fuels) and D 1826–77 (gaseous fuels) (incorporated by reference—see § 60.17), as applicable, shall be used to determine the gross calorific values.

(c) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(d) The owner or operator shall determine compliance with the particulate matter standards in §§ 60.292 and 60.293 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\,W_{sd}-A)/P$$

where:

E=emission rate of particulate matter, g/kg.

c_s=concentration of particulate matter, g/dsm.

Q_{sd}=volumetric flow rate, dscm/hr.

A=zero production rate correction

=227 g/hr for container glass, pressed and blown (soda-lime and lead) glass, and pressed and blown (other than borosilicate, soda-lime, and lead) glass.

=454 g/hr for pressed and blown (borosilicate) glass, wool fiberglass, and flat glass.

P=glass production rate, kg/hr.

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). The probe and filter holder heating system may be set to provide a gas temperature no greater than 177±14 °C (350±25 °F), except under the conditions specified in § 60.293(e).

(3) Direct measurement or material balance using good engineering practice shall be used to determine the amount of glass pulled during the performance test. The rate of glass produced is defined as the weight of glass pulled from the affected facility during the performance test divided by the number of hours taken to perform the performance test.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

62. Section 60.303 is revised to read as follows:

§ 60.303 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.302 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration and the volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 1.70 dscm (60 dscf). The probe and filter holder shall be operated without heaters.

(2) Method 2 shall be used to determine the ventilation volumetric flow rate.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used.

63. Section 60.335 is revised to read as follows:

§ 60.335 Test methods and procedures.

(a) To compute the nitrogen oxides emissions, the owner or operator shall use analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(c) The owner or operator shall determine compliance with the nitrogen oxides and sulfur dioxide standards in §§ 60.332 and 60.333(a) as follows:

(1) The nitrogen oxides emission rate (NO_x) shall be computed for each run using the following equation:

$$NO_x=(NO_{xo})\,(P_r/P_o)^{0.5}\,e^{19(H_o-0.00633)}\,(288°K/T_a)^{1.53}$$

where:

NO_x=emission rate of NO_x at 15 percent O_2 and ISO standard ambient conditions, volume percent.
NO_{xo}=observed NO_x concentration, ppm by volume.
P_r=reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.
P_o=observed combustor inlet absolute pressure at test, mm Hg.
H_o=observed humidity of ambient air, g H_2O/g air.
e=transcendental constant, 2.718.
T_a=ambient temperature, °K.

(2) The monitoring device of § 60.334(a) shall be used to determine the fuel consumption and the water-to-fuel ratio necessary to comply with § 60.332 at 30, 50, 75, and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer.

(3) Method 20 shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NO_x emissions shall be determined at each of the load conditions specified in paragraph (c)(2) of this section.

(d) The owner or operator shall determine compliance with the sulfur content standard in § 60.333(b) as follows: ASTM D 2880–71 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072–80, D 3031–81, D 4084–82, or D 3246–81 shall be used for the sulfur content of gaseous fuels (incorporated by reference—see § 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator.

(e) To meet the requirements of § 60.334(b), the owner or operator shall use the methods specified in paragraphs (a) and (d) of this section to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) Instead of using the equation in paragraph (b)(1) of this section, manufacturers may develop ambient condition correction factors to adjust the nitrogen oxides emission level measured by the performance test as provided in § 60.8 to ISO standard day conditions. These factors are developed for each gas turbine model they manufacture in terms of combustion inlet pressure, ambient air pressure, ambient air humidity, and ambient air temperature. They shall be substantiated with data and must be approved for use by the Administrator before the initial performance test required by § 60.8. Notices of approval of custom ambient condition correction factors will be published in the **Federal Register**.

§ 60.343 [Amended]

64. In § 60.343(e), the last sentence is revised to read as follows: "If visible emission observations are made according to paragraph (b) of this section, reports of excess emissions shall be submitted semiannually."

65. Section 60.344 is revised to read as follows:

§ 60.344 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.342(a) as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\,Q_{sd})/PK)$$

where:

E=emission rate of particulate matter, kg/Mg (1b/ton) of stone feed.
c_s=concentration of particulate matter, g/dscm (g/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P=stone feed rate, Mg/hr (ton/hr).
K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used at negative-pressure fabric filters and other types of control devices and Method 5D shall be used as positive-pressure fabric filters to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(3) The monitoring device of § 60.343(d) shall be used to determine the stone feed rate (P) for each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) During the particulate matter run, the owner or operator shall use the monitoring devices in § 60.343(c) (1) and (2) to determine the average pressure loss of the gas stream through the scrubber and the average scrubbing liquid supply pressure.

66. Section 60.374 is revised to read as follows:

§ 60.374 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the lead standards in § 60.372, except § 60.372(a)(4), as follows:

(1) Method 12 shall be used to determine the lead concentration and, if applicable, the volumetric flow rate (Q_{sda}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) When different operations in a three-process operation facility are ducted to separate control devices, the lead emission concentration (C) from the facility shall be determined as follows:

$$C=\left[\sum_{a=1}^{N}(C_a Q_{sda})\right]/\sum_{a=1}^{N} Q_{sda}$$

where:

C=concentration of lead emissions for the entire facility, mg/dscm (gr/dscf).

C_a=concentration of lead emissions from facility "a", mg/dscm (gr/dscf).

Q_{sda}=volumetric flow rate of effluent gas from facility "a", dscm/hr (dscf/hr).

N=total number of control devices to which separate operations in the facility are ducted.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity. The opacity numbers shall be rounded off to the nearest whole percentage.

(c) The owner or operator shall determine compliance with the lead standard in § 60.372(a)(4) as follows:

(1) The emission rate (E) from lead oxide manufacturing facility shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{M} C_{Pbi}Q_{sdi}\right)/(P\,K)$$

where:

E=emission rate of lead, mg/kg (lb/ton) of lead charged.

C_{Pbi}=concentration of lead from emission point "i," mg/dscm.

Q_{sdi}=volumetric flow rate of effluent gas from emission point "i," dscm/hr (sdcf/hr).

M=number of emission points in the affected facility.

P=lead feed rate to the facility, kg/hr (ton/hr).

K=conversion factor, 1.0 mg/mg (453,600 mg/lb).

(2) Method 12 shall be used to determine the lead concentration (C_{Pb}) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The average lead feed rate (P) shall be determined for each run using the following equation:

$P=N\,W/\Theta$

where:

N=number of lead pigs (ingots) charged.

W=average mass of a pig, kg (ton).

Θ=duration of run, hr.

§ 60.385 [Amended]

67. In § 60.385(c), the words "those measurements recorded" are revised to read "the average obtained".

68. Section 60.386 is revised to read as follows:

§ 60.386 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine complance with the particulate matter standards § 60.382 as follows:

(1) Method 5 or 17 shall be used to determine the particulate matter concentration. The sample volume for each run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions and process fugitive emissions. The observer shall read opacity only when emissions are clearly identified as emanating solely from the affected facility being observed.

(c) To comply with § 60.385(c), the owner or operator shall use the monitoring devices in § 60.3284(a) and (b) to determine the pressure loss of the gas stream through the scrubber and scrubbing liquid flow rate at any time during each particulate matter run, and the average of the three determinations shall be computed.

69. Section 60.404 is revised to read as follows:

§ 60.404 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.402 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(c_s\,Q_{sd})/(P\,K)$

where:

E=emission rate of particulate matter, kb/Mg (lb/ton) of phosphate rock feed.

c_s=concentration of particulate matter, g/dscm (g/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=phosphate rock feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The device of § 60.403(d) shall be used to determine the phosphate rock feed rate (P) for each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) To comply with § 60.403(f), if applicable, the owner or operator shall use the monitoring devices in § 60.403(c) (1) and (2) to determine the average pressure loss of the gas stream through the scrubber and the average scrubbing supply pressure during the particulate matter runs.

70. Section 60.424 is revised to read as follows:

§ 60.424 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.422 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(c_sQ_{sd})/(PK)$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton) of ammonium sulfate produced.
c_s=concentration of particulate matter, g/dscm (g/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P=production rate of ammonium sulfate, Mg/hr (ton/hr).
K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 1.50 dscm (53 dscf).

(3) Direct measurement using product weigh scales or computed from material balance shall be used to determine the rate (P) of the ammonium sulfate production. If production rate is determined by material balance, the following equations shall be used:

(i) For synthetic and coke oven by-product ammonium sulfate plants:

$P=ABCK'$

where:

A=sulfuric aid flow rate to the reactor/crystallizer averaged over the time period taken to conduct the run, liter/min.
B=acid density (a function of acid strength and temperature), g/cc.
C=acid strength, decimal fraction.
K'=conversion factor, 0.0808 (Mg-min-cc)/(g-hr-liter) [0.0891 (ton-min-cc)/(g-hr-liter)].

(ii) For caprolactam by-product ammonium sulfate plants:

$P=DEFK''$

where:

D=total combined feed stream flow rate to the ammonium crystallizer before the point where any recycle streams enter the stream averaged over the time period taken to conduct the test run, liter/min.
E=density of the process stream solution, g/liter.
F=percent mass of ammonium sulfate in the process solution, decimal fraction.
K''=conversion factor, 6.0×10^{-5} (Mg-min)/(g-hr) [6.614×10^{-5} (ton-min)/(g-hr)].

(3) Method 9 and the procedures in § 60.11 shall be used to determine the opacity.

71. Section 60.474 is revised to read as follows:

§ 60.474 Test methods and procedures.

(a) For saturators, the owner or operator shall conduct performance tests required in § 60.8 as follows:

(1) If the final product is shingle or mineral-surfaced roll roofing, the tests shall be conducted while 106.6-kg (235-lb) shingle is being produced.

(2) If the final product is saturated felt or smooth-surfaced roll roofing, the tests shall be conducted while 6.8-kg (15-lb) felt is being produced.

(3) If the final product is fiberglass shingle, the test shall be conducted while a nominal 100-kg (220-lb) shingle is being produced.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the particulate matter standards in § 60.472 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(c_sQ_{sd})/(PK)$

where:

E=emission rate of particulate matter, kg/Mg.
c_s=concentration of particulate matter, g/dscm (g/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P=asphalt roofing production rate or asphalt charging rate, Mg/hr (ton/hr).
K=conversion factor, 1000 g/kg [907.2/(g-Mg)/(kg-ton)].

(2) Method 5A shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. For a saturator, the sampling time and sample volume for each run shall be at least 120 minutes and 3.00 dscm (106 dscf), and for the blowing still, at least 90 minutes or the duration of the coating blow or non-coating blow, whichever is greater, and 2.25 dscm (79.4 dscf).

(3) For the saturator, the asphalt roofing production rate (P) for each run shall be determined as follows: The amount of asphalt roofing produced on the shingle or saturated felt process lines shall be obtained by direct measurement. The asphalt roofing production rate is the amount produced divided by the time taken for the run.

(4) For the blowing still, the asphalt charging rate (P) shall be computed for each run using the following equation:

$P=(Vd)/(K'\theta)$

where:

P=asphalt charging rate to blowing still, Mg/hr (ton/hr).
V=volume of asphalt charged, m^3 (ft^3).
d=density of asphalt, kg/m^3 (llb/ft^3).
K'=conversion factor, 1000 kg/Mg (200 lb/ton).
θ=duration of test run, hr.

(i) The volume (V) of asphalt charged shall be measured by any means accurate to within 10 percent.

(ii) The density (d) of the asphalt shall be computed using the following equation:

$$d=K''(1056.1-0.6176\ {}^{\circ}C)$$

where:

°C=temperature at the start of the blow, °C.
K''=1.0 [0.06243 ($lb-m^3$)/(ft^3-kg).

(5) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(d) The Administrator will determine compliance with the standards in § 60.472(a)(3) by using Method 22, modified so that readings are recorded every 15 seconds for a period of consecutive observations during representative conditions (in accordance with § 60.8(c)) totaling 60 minutes. A performance test shall consist of one run.

(e) The owner or operator shall use the monitoring device in § 60.473 (a) or (b) to monitor and record continuously the temperature during the particulate matter run and shall report the results to the Administrator with the performance test results.

(f) If at a later date the owner or operator believes the emission limits in § 60.472 (a) and (b) are being met even though the temperature measured in accordance with § 60.473 (a) and (b) is exceeding that measured during the performance test, he may submit a written request to the Administrator to repeat the performance test and procedure outlined in paragraph (c) of this section.

(g) If fuel oil is to be used to fire an afterburner used to control emissions from a blowing still, the owner or operator may petition the Administrator in accordance with § 60.11(e) of the General Provisions to establish an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. To obtain this opacity standard, the owner or operator must request the Administrator to determine opacity during an initial, or subsequent, performance test when fuel oil is used to fire the afterburner. Upon receipt of the results of the performance test, the Administrator will make a finding concerning compliance with the mass standard for the blowing still. If the Administrator finds that the facility was in compliance with the mass standard during the performance test but failed to meet the zero opacity standard, the Administrator will establish and promulgate in the **Federal Register** an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. When the afterburner is fired with natural gas, the zero percent opacity remains the applicable opacity standard.

72. Section 60.485 is revised to read as follows:

§ 60.485 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§ 60.482, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in §§ 60.482–2(e), 60.482–3(i), 60.482–4, 60.482–7(f), and 60.482–10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicates by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC series, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E–260, E–168, E–169 (incorporated by reference—see § 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C. Standard reference texts or ASTM D–2879 (incorporated by reference—see § 60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity (V_{max}) for air-assisted flares shall be computed using the following equation:

$$V_{max}=8.706+0.7084\,H_T$$

where:

V_{max}=maximum permitted velocity, m/sec.

H_T=net heating value of the gas being combusted, MJ/scm.

(4) The net heating value (H_T) of the gas being combusted in a flare shall be computed as follows:

$$H_T=K\overset{n}{\underset{i=1}{}}C_i\,H_i$$

where:

K=conversion constant, 1.740×10^7 [(g-mole)(MJ)]/[(ppm)(scm)(kcal).

C_i=concentration of sample component "i", ppm.

H_i=net heat of combustion of sample component "i" at 25 °C and 760 mm Hg, kcal/g-mole.

(5) Method 18 and ASTM D 2504–67 (incorporated by reference—see § 60.17) shall be used to determine the concentration of sample component "i."

(6) ASTM D 2382–76 (incorporated by reference—see § 60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

§ 60.502 [Amended]

73. In § 60.502(h), the reference "§ 60.503(b)" is revised to read "§ 60.503(d)".

74. Section 60.503 is revised to read as follows:

§ 60.503 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). The three-run requirement of § 60.8(f) does not apply to this subpart.

(b) Immediately before the performance test required to determine compliance with § 60.502 (b), (c), and (h), the owner or operator shall use Method 21 to monitor for leakage of vapor all potential sources in the terminal's vapor collection system equipment while a gasoline tank truck is being loaded. The owner or operator shall repair all leaks with readings of 10,000 ppm (as methane) or greater before conducting the performance test.

(c) The owner or operator shall determine compliance with the standards in § 60.502 (b) and (c) as follows:

(1) The performance test shall be 6 hours long during which at least 300,000 liters of gasoline is loaded. If this is not possible, the test may be continued the same day until 300,000 liters of gasoline is loaded or the test may be resumed the next day with another complete 6-hour period. In the latter case, the 300,000-liter criterion need not be met. However, as much as possible, testing should be conducted during the 6-hour period in

which the highest throughput normally occurs.

(2) If the vapor processing system is intermittent in operation, the performance test shall begin at a reference vapor holder level and shall end at the same reference point. The test shall include at least two startups and shutdowns of the vapor processor. If this does not occur under automatically controlled operations, the system shall be manually controlled.

(3) The emission rate (E) of total organic compounds shall be computed using the following equation:

$$E=K\sum_{i=1}^{n}(V_{esi}\,C_{ei})/(L\,10^{6})$$

where:

E=emission rate of total organic compounds, mg/liter of gasoline loaded.

V_{esi}=volume of air-vapor mixture exhausted at each interval "i", scm.

C_{ei}=concentration of total organic compounds at each interval "i", ppm.

L=total volume of gasoline loaded, liters.

n=number of testing intervals.

i=emission testing interval of 5 minutes.

K=density of calibration gas, 1.83×10^{6} for propane and 2.41×10^{6} for butane, mg/scm.

(4) The performance test shall be conducted in intervals of 5 minutes. For each interval "i", readings from each measurement shall be recorded, and the volume exhausted (V_{esi}) and the corresponding average total organic compounds concentration (C_{ei}) shall be determined. The sampling system response time shall be considered in determining the average total organic compounds concentration corresponding to the volume exhausted.

(5) The following methods shall be used to determine the volume (V_{esi}) air-vapor mixture exhausted at each interval:

(i) Method 2B shall be used for combustion vapor processing systems.

(ii) Method 2A shall be used for all other vapor processing systems.

(6) Method 25A or 25B shall be used for determining the total organic compounds concentration (C_{ei}) at each interval. The calibration gas shall be either propane or butane. The owner or operator may exclude the methane and ethane content in the exhaust vent by any method (e.g., Method 18) approved by the Administrator.

(7) To determine the volume (L) of gasoline dispensed during the performance test period at all loading racks whose vapor emissions are controlled by the processing system being tested, terminal records or readings from gasoline dispensing meters at each loading rack shall be used.

(d) The owner or operator shall determine compliance with the standard in § 60.502(h) as follows:

(1) A pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to 500 mm of water gauge pressure with ±2.5 mm of water precision, shall be calibrated and installed on the terminal's vapor collection system at a pressure tap located as close as possible to the connection with the gasoline tank truck.

(2) During the performance test, the pressure shall be recorded every 5 minutes while a gasoline truck is being loaded; the highest instantaneous pressure that occurs during each loading shall also be recorded. Every loading position must be tested at least once during the performance test.

§ 60.643 [Amended]

75. Section 60.643(b) is revised as follows:

(b) The emission reduction efficiency (R) achieved by the sulfur reduction technology shall be determined using the procedures in § 60.644(c)(1).

§ 60.645 [Removed and Reserved]

76. Section 60.645 is removed and reserved, and § 60.644 is revised to read as follows:

§ 60.644 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in paragraph § 60.8(b).

(b) During a performance test required by § 60.8, the owner or operator shall determine the minimum required reduction efficiencies (Z) of SO_2 emissions as required in § 60.642 (a) and (b) as follows:

(1) The average sulfur feed rate (X) shall be computed as follows:

$$X=K\,Q_a\,Y$$

where:

X=average sulfur feed rate, long ton/day.

Q_a=average volumetric flow rate of acid gas from sweetening unit, dscf/day.

Y=average H_2S concentration in acid gas feed from sweetening unit, percent by volume.

K=(32 lb S/lb-mole)/[(100%)(385.36 dscf/lb-mole)(2240 lb/long ton)]
$=3.707\times10^{-7}$

(2) The continuous readings from the process flowmeter shall be used to determine the average volumetric flow rate (Q_a) in dscf/day of the acid gas from the sweetening unit for each run.

(3) The Tutwiler procedure in § 60.648 or a chromatographic procedure following ASTM E-260 (incorporated by reference—see § 60.17) shall be used to determine the H_2S concentration in the acid gas feed from the sweetening unit. At least one sample per hour (at equally spaced intervals) shall be taken during each 4-hour run. The arithmetic mean of all samples shall be the average H_2S concentration (Y) on a dry basis for the run. By multiplying the result from the Tutwiler procedure by 1.62×10^{-3}, the units gr/100 scf are converted to volume percent.

(4) Using the information from paragraphs (b) (1) and (3), Tables 1 and 2 shall be used to determine the required initial (Z_i) and continuous (Z_c) reduction efficiencies of SO_2 emissions.

(c) The owner or operator shall determine compliance with the SO_2 standards in § 60.642 (a) or (b) as follows:

(1) The emission reduction efficiency (R) achieved by the sulfur recovery technology shall be computed for each run using the following equation:

$$R=(100\,S)/(S+E)$$

(2) The level indicators or manual soundings shall be used to measure the liquid sulfur accumulation rate in the product storage tanks. Readings taken at the beginning and end of each run, the tank geometry, sulfur density at the storage temperature, and sample duration shall be used to determine the sulfur production rate (S) in kg/hr for each run.

(3) The emission rate (E) of sulfur shall be computed for each run as follows:

$$E=C_e\,Q_{sd}/K$$

where:

C_e=concentration of sulfur equivalent (SO_2+TRS), g/dscm.

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr.

K=conversion factor, 1000 g/kg.

(4) The concentration (C_e) of sulfur equivalent shall be the sum of the SO_2 and TRS concentrations, after being converted to sulfur equivalents. For each run and each of the test methods specified in this paragraph (c) of this section, the sampling time shall be at least 4 hours. Method 1 shall be used to select the sampling site. The sampling point in the duct shall be at the centroid

of the cross-section if the area is less than 5 m^2 (54 ft^2) or at a point no closer to the walls than 1 m (39 in.) if the cross-sectional area is 5 m^2 or more, and the centroid is more than 1 m (39 in.) from the wall.

(i) Method 6 shall be used to determine the SO_2 concentration. Eight samples of 20 minutes each shall be taken at 30-minute intervals. The arithmetic average in mg/dscm shall be the concentration for the run. The concentration in mg/dscm shall be multiplied by 0.5 to convert the results to sulfur equivalent.

(ii) Method 15 shall be used to determine the TRS concentration from reduction-type devices or where the oxygen content of the effluent gas is less than 1.0 percent by volume. The sampling rate shall be at least 3 liters/min (0.1 ft^3/min) to insure minimum residence time in the sample line. Sixteen samples shall be taken at 15-minute intervals. The arithmetic average of all the samples shall be the concentration for the run. The concentration in ppm TRS as H_2S shall be multiplied by 1.352×10^{-6} to convert the results to sulfur equivalent.

(iii) Method 16A shall be used to determine the TRS concentration from oxidation-type devices or where the oxygen content of the effluent gas is greater than 1.0 percent by volume. Eight samples of 20 minutes each shall be taken at 30-minute intervals. The arithmetic average shall be the concentration for the run. The concentration in ppm TRS as H_2S shall be multiplied by 1.352×10^{-6} to convert the results to sulfur equivalent.

(iv) Method 2 shall be used to determine the volumetric flow rate of the effluent gas. A velocity traverse shall be conducted at the beginning and end of each run. The arithmetic average of the two measurements shall be used to calculate the volumetric flow rate (Q_{sd}) for the run. For the determination of the effluent gas molecular weight, a single integrated sample over the 4-hour period may be taken and analyzed or grab samples at 1-hour intervals may be taken, analyzed, and averaged. For the moisture content, two samples of at least 0.10 dscm (0.35 dscf) and 10 minutes shall be taken at the beginning of the 4-hour run and near the end of the time period. The arithmetic average of the two runs shall be the moisture content for the run.

(d) To comply with § 60.646(d), the owner or operator shall obtain the information required by using the monitoring devices in paragraph (b) of (c) of this section.

§ 60.646 **[Amended]**

77. In § 60.646(a)(2), the reference "§ 60.645(a)(8)" is revised to read "§ 60.644(b)(1)".

78. In § 60.646(a)(4), the reference "§ 60.644(a)(4)" is revised to read "§ 60.644(b)(3)".

79. In § 60.646(d), the reference "§ 60.643(b)" is revised to read "§ 60.644(c)(1)".

80. Section 60.675 is revised to read as follows:

§ 60.675 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.272(a) as follows:

(1) Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) In determining compliance with the particulate matter standards in § 60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in § 60.11, with the following additions:

(1) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(2) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.

(3) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

(d) In determining compliance with § 60.672(e), the owner or operator shall use Method 22 to determine fugitive emissions. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test for each building shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes.

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

(i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.

(f) To comply with § 60.676(d), the owner or operator shall record the measurements as required § 60.676(c) using the monitoring devices in § 60.674 (a) and (b) during each particulate matter run and shall determine the averages.

§ 60.676 **[Amended]**

81. In § 60.676(d), the words "those measurements recorded" are revised to read "the averaged determined".

82. Section 60.685 is revised to read as follows:

§ 60.685 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in § 60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(C_t\,Q_{sd})/(P_{avg}\,K)$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton).
C_t=concentration of particulate matter, g/dscm (g/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P_{avg}=average glass pull rate, Mg/hr (ton/hr).
K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5E shall be used to determine the particulate matter concentration (C_t) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90 dscf).

(3) The average glass pull rate (P_{avg}) for the manufacturing line shall be the arithmetic average of three glass pull rate (P_i) determinations taken at intervals of at least 30 minutes during each run.

The individual glass pull rates (P_i) shall be computed using the following equation:

$P_i=K'\,L_s\,W_m\,M\,[1.0-(LOI/100)]$

where:

P_i=glass pull rate at interval "i", Mg/hr (ton/hr).
L_s=line speed, m/min (ft/min).
W_m=trimmed mat width, m (ft).
M=mat gram weight, g/m^2 (lb/ft^2).
LOI=loss on ignition, weight percent.
K'=conversion factor, 6×10^{-5} (min-Mg)/(hr-g) [3×10^{-2} (min-ton)/(hr-lb)].

(i) ASTM Standard Test Method D2584–68 (Reapproved 1979) (incorporated by reference—see § 60.17), shall be used to determine the LOI for each run.

(ii) Line speed (L_s), trimmed mat width (W_m), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.

(d) To comply with § 60.684(d), the owner or operator shall record measurements as required in § 60.684 (a) and (b) using the monitoring devices in § 60.683 (a) and (b) during the particulate matter runs.

[FR Doc. 89-3064 Filed 2-13-89; 8:45 am]

BILLING CODE 6560-50-M