ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9, 72, and 75

[FRL–5203–3]

Acid Rain Program: Permits Regulation General Provisions and Continuous Emission Monitoring Rule Technical Revisions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: Title IV of the Clean Air Act (the Act), as amended by the Clean Air Act Amendments of 1990, authorizes the Environmental Protection Agency (EPA or Agency) to establish the Acid Rain Program. The program sets emissions limitations to reduce acidic deposition and its serious, adverse effects on natural resources, ecosystems, materials, visibility, and public health. On January 11, 1993, the Agency promulgated final rules under title IV. Several parties filed petitions for review of the rules. On April 17, 1995, the EPA and the parties signed a settlement agreement addressing continuous emission monitoring (CEM) issues.

This direct final rule would amend the Continuous Emission Monitoring (CEM) provisions and the General Provisions of the Acid Rain Program for the purpose of making the implementation of the program simpler, streamlined, and more efficient for both the EPA and industry. The rule amendment is being issued as a direct final rule because the corrections are technical in nature and address various implementation issues without major changes in policy. Furthermore, the rule amendments are consistent with the April 17, 1995 settlement agreement. Therefore, EPA believes these amendments are noncontroversial and has provided for the amendments to be effective 60 days after publication in the **Federal Register**.

DATES: *Effective Dates.* This final rule will be effective July 17, 1995. However, if significant adverse comments on portions of the rule are received by June 16, 1995, then the effective date of those provisions will be delayed, EPA will withdraw those portions of the rule, and timely notice will be published in the **Federal Register**. Sections 75.50, 75.51 and 75.52; redesignated section 2.4.3.1 of appendix D of part 75; and sections 4.3.1, 4.3.2, 4.3.3, 4.4.3, 5.3. and 5.4 of appendix F of part 75 are effective through December 31, 1995. The incorporation by reference of certain publications listed in the regulation is approved by the Director of the Federal Register as of July 17, 1995.

Compliance Dates. Information on compliance dates is in the Supplementary Information section of this preamble and in appendix J of part 75.

ADDRESSES: Any written comments must be identified with Docket No. A–94–16, must be identified as comments on the direct final rule and companion proposal, and must be submitted in duplicate to: EPA Air Docket (6102), Environmental Protection Agency, 401 M Street SW, Washington, DC 20460. The docket is available for public inspection and copying between 8:30 a.m. and 3:30 p.m., Monday through Friday, at the address given above. A reasonable fee may be charged for copying. A detailed rationale for the revisions is set forth in the technical support document for the direct final rule, which can be obtained by writing to the Air Docket at the address given above.

FOR FURTHER INFORMATION CONTACT: Margaret Sheppard, Acid Rain Division (6204J), U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460, telephone number (202) 233–9180.

SUPPLEMENTARY INFORMATION: The EPA is revising the CEM provisions as a direct final rule without prior proposal because the Agency views these revisions as noncontroversial and anticipates no significant adverse comments. The EPA is also publishing a companion proposed rule to this direct final rule in this issue of the **Federal Register** in order to take comment on provisions of the direct final rule. If EPA does receive significant adverse comments, EPA will publish a document in the **Federal Register** withdrawing portions of the direct final rule. In addition, EPA is publishing an interim final rule in today's **Federal Register** to address other monitoring issues that may be controversial. The EPA will not institute a second comment period on the proposed rule, on the interim final rule, or on any subsequent final rule. Any parties interested in commenting on these revisions to parts 72 and 75 should do so at this time.

Significant adverse comment will be addressed in a subsequent final rulemaking document. If EPA withdraws portions of the direct final rule, EPA will accept comments for 15 days after publication of the notice of withdrawal in order to receive additional comments on withdrawn portions of the rule. If the effective date is delayed, timely notice will be published in the **Federal Register**.

The owner or operator shall comply with the following requirements from July 17, 1995 through December 31, 1995: for the recordkeeping requirements of subpart F of part 75, by following either §§ 75.50, 75.51 and 75.52 or §§ 75.54, 75.55 and 75.56; for the missing data substitution requirements for carbon dioxide (CO_2) and heat input, by following either §§ 75.35 and 75.36 or sections 4.3.1 through 4.3.3, section 4.4.3 and section 5.3 and 5.4 of appendix F of part 75; and for the missing data substitution requirements for fuel flowmeters by following either section 2.4.3.1 or sections 2.4.3.2 and 2.4.3.3 of appendix D of part 75.

On or after January 1, 1996, the owner or operator shall comply with the following requirements: for the recordkeeping requirements of subpart F of part 75, by meeting the requirements of §§ 75.54, 75.55, and 75.56; and for the missing data substitution requirements for CO_2 concentration, heat input and fuel flowmeters by meeting the requirements of §§ 75.35 and 75.36 and sections 2.4.3.2 through 2.4.3.3 of appendix D of part 75.

The EPA has been engaged in settlement discussions with several parties who challenged certain provisions of the Acid Rain CEM rules promulgated on January 11, 1993. [See *Environmental Defense Fund* v. *Browner*, No. 93–1203 and consolidated cases, ''Complex'' (D.C. Cir. filed March 12, 1993).] Although the parties have been able to reach agreement on a number of issues, which are addressed in this direct final rulemaking, some additional issues remain outstanding. The outstanding issues, unlike the noncontroversial and routine technical corrections and other amendments addressed by this direct final rule, may not be considered noncontroversial and therefore are being addressed separately in an interim final rule, published elsewhere in this **Federal Register**.

I. Acid Rain Program Background

A. Rulemaking Background

On January 11, 1993, EPA promulgated the ''core'' regulations that implemented the major provisions of title IV of the Clean Air Act (CAA or the Act), as amended November 15, 1990, including the General Provisions of the Permits Regulation (40 CFR part 72) and the CEM regulation at 40 CFR part 75 authorized under Sections 412 and 821 of the Act. The CEM rule specifies how each affected utility unit must install a system to continuously monitor the emissions and to collect, record, and report emissions data to ensure that the mandated reductions in sulfur dioxide (SO_2) and nitrogen dioxide (NO_X) emissions are achieved, that opacity and CO_2 emissions are measured, and that SO_2 emissions are accurately measured so that the allowance system functions in an orderly manner. Technical corrections were published on June 23, 1993 and July 30, 1993. An amendment to the certification deadline for NO_X and CO_2 monitoring for oil-fired units and gas-fired units was published on August 18, 1994.

Since the CEM rule was promulgated, the operation of Phase I utility units have essentially completed the first stage of implementation of the rule, having submitted monitoring plans, conducted certification testing, submitted certification applications, and submitted their first quarterly reports. In addition, many Phase II utility units also have begun implementation. During early implementation, many technical issues have been raised, including many minor issues which could be addressed by technical corrections. The preamble discussion that follows outlines the changes that are contained in today's direct final rulemaking that will make these technical corrections.

B. Implementation Background

The EPA held three Acid Rain Implementation Conferences (January 5–6, 1993; January 25–26, 1993; and March 16–17, 1993). In these public meetings, EPA staff presented an overview of the Acid Rain Program and Acid Rain core rules. Some of the changes in today's revised rule resulted from issues raised by the public at these conferences.

In order to respond to a multitude of questions raised by industry, EPA instituted a new ''Acid Rain monitoring'' section on the Agency's computerized Technology Transfer Network Bulletin Board System (TTNBBS). This bulletin board can be accessed by computer modem at (919) 541–5742. The EPA's Acid Rain Division periodically updates this section of the bulletin board with notices of meetings, interpretations of part 75, policy determinations, and other information relevant to State environmental regulators and the regulated community. In particular, EPA has published three installments of commonly asked questions and their answers in the ''Acid Rain CEM (Part 75) Policy Manual'' (Docket Item I–D–54). Many of these policy determinations and clarifications of part 75 are incorporated into today's revised rule.

Some standard forms have been revised to be consistent with the changes in this rulemaking. Packages of revised standard forms, with instructions, will contain revised monitoring plan forms, certification forms, and electronic data reporting format, and will be available from EPA in electronic form from the TTNBBS by using computer modem at (919) 541–5742 or on paper by calling the Acid Rain Hotline at (202) 233–9620.

II. Changes to Parts 72 and 75—General Provisions of the Permits Regulation and Continuous Emission Monitoring

Several of the definitions in § 72.2 related to monitoring have been revised. As explained below, EPA edited these definitions and added a few definitions to explain or clarify new or existing terms in part 75.

The changes to part 75 are clarifications intended to ease implementation, and do not constitute major policy changes. The most significant changes in today's revised part 75 concern deadlines for completing certification testing, the procedures for exceptions to the use of CEMS found in appendices D and E, and the provisions for determining the span of NO_X pollutant concentration monitors. The EPA has added to the list of certification testing deadlines to apply to more types of units that might require certification after the statutory deadline for installation of CEMS. In addition, the Agency rewrote major portions of appendices D and E to make them easier to understand and to implement. Changes to appendix E also substantially reduce the time and difficulty of testing required to obtain NO_X emission rate data. Finally, the procedures for determining NO_X span have been revised so that utilities with units having low NO_X emission rates may select a single span representative of the situation at their plant, rather than being required to use both a high scale and a low scale measurement range. A list of compliance dates for the revised recordkeeping requirements and missing data substitution procedures are included in the new appendix J.

The rationale and effect of the revisions to parts 72 and 75 are discussed in detail in a technical support document. This document may be obtained from the EPA Air Docket as Docket Item II–F–2, ''Technical Support Document (Attachment A),'' in Docket No. A–94–16. In addition, EPA is publishing this document under the CAA Title IV portion of EPA's TTNBBS. This bulletin board can be accessed by computer modem at (919) 541–5742. The topics in the rule revisions discussed in the Technical Support Document are as follows:

I. Glossary of Terms and Abbreviations
II. Acid Rain Program Background
A. Rulemaking Background
B. Implementation Background
III. Changes to Part 72—Permits Regulation General Provisions
A. Fuel-related Definitions
B. Operating Hour Definitions
C. Calibration Gas Definitions
D. Bypass Operating Quarter, Unit Operating Quarter
E. Ozone Nonattainment Area, Ozone Transport Region
F. Other Definitions
IV. Changes to Part 75—Continuous Emission Monitoring
A. General Revisions
B. Changes to Subpart A, General
1. Certification Deadlines
a. Shutdown Units
b. New Stacks or Flue Gas Desulfurization Systems
c. Backup Fuel and Emergency Fuel
d. Newly Affected Units
e. EIA Forms
f. Emissions Accounting Prior to Certification
2. Incorporation by Reference
3. Relative Accuracy and Availability Performance Analysis
C. Changes to Subpart B, Monitoring Provisions
1. Calculation of Average Emissions and Opacity Data
2. Peaking Unit Definition and Applicability of Appendix E
3. SO_2 Monitoring During Combustion of Gas for Units With SO_2 CEMS
4. Monitoring Common Stacks, Bypass Stacks, and Multiple Stacks
a. Common Stack Monitoring
b. Multiple Stacks—NO_XMonitoring
c. Bypass Stack Monitoring
5. Determining Emissions From Qualifying Phase I Technologies
D. Changes to Subpart C, Operation and Maintenance Requirements
1. Certification Procedures for CEMS
a. Initial Certification and Recertification
b. Loss of Certification Procedures
c. Submission and Retesting Deadlines
d. Audit Decertification
e. Monitoring Systems To Be Certified
f. Use of Backup or Portable Monitoring Systems
2. Certification Procedures for Alternative Monitoring Systems
3. Certification Procedures for Excepted Monitoring Systems
E. Changes to Subpart D, Missing Data Procedures
1. Missing Data Procedures for Peaking Units
2. Addition to NO_X and Flow Missing Data Procedures
3. Changes to CO_2 and Heat Input Procedures
4. Missing Data Procedures for Units With Add-on Emission Controls
5. SO_2 Concentration Missing Data During Gas Combustion
F. Changes to Subpart E, Alternative Monitoring Systems

G. Changes to Subpart F, Recordkeeping Requirements
1. Additional Sections 75.54, 75.55 and 75.56
2. Changes to Emission Data Records
3. Certification Records
4. Monitoring Plans
5. Records File
H. Changes to Subpart G, Reporting Requirements
1. Notifications to EPA and State Agencies
2. Information Not Reported to EPA
3. Effective Date of Revised Reporting Requirements
4. Petitions to the Administrator
5. Confidentiality of Data
6. Reporting Addresses
I. Changes to Appendix A, Specifications and Testing Procedures
1. Changes to Span Requirements
a. Span for SO_2 Pollutant Concentration Monitors
b. Span for NO_X Pollutant Concentration Monitors
c. Changes to Span
2. Clarification of Certification Test Procedures
a. Calibration Error Test
b. Cycle Time Test
c. Relative Accuracy Test for NO_X
d. RATAs for CO_2 and O_2
3. Calibration Gases
4. Changes to Appendix B, Quality Assurance and Quality Control Procedures
5. Periodic RATAs for Monitors on Peaking Units and Bypass Stacks
6. Incentive Standard and Out-of-Control for CO_2 Monitors
7. Incentive Standard for NO_X Low Emitters
8. Quality Assurance of Data Following Daily Calibration Error Test
9. Recalibration
10. Calibration Gas for Linearity Checks
J. Changes to Appendix C, Missing Data Statistical Estimation Procedures
1. Changes to Parametric Monitoring Procedure for Missing Data
2. Clarifications of Load-Based Procedure for Missing Flow Rate and NO_X Emission Rate Data
K. Changes to Appendix D, Optional SO_2 Emission Protocol for Gas-fired and Oil-fired Units
1. Gaseous Fuels Other Than Natural Gas
2. SO_2 Emissions From Natural Gas
3. Fuel Flowmeter Installation Requirements
4. Gas Flowmeter Accuracy
5. Fuel Flowmeter Calibration and Quality Assurance Requirements
6. Fuel Sampling for Diesel Fuel
7. Turnaround Time for Fuel Analysis
8. Missing Data Procedures
9. Heat Input
L. Changes to Appendix E, Optional NO_X Emission Estimation Protocol for Gas-fired Peaking Units and Oil-fired Peaking Units
1. Testing by Fuel
2. Heat Input as Unit Operating Load
3. Number of Load Levels
4. Tests by Excess O_2 Level
5. Efficiency Testing
6. Stack Testing Procedures
7. Quality Assurance and Quality Control Parameters
8. Emergency Fuel Provisions
M. Changes to Appendix F, Conversion Procedures
1. Heat Input
2. Diluent Cap Values
3. NO_X and SO_2 Conversion Procedures
N. Changes to Appendix G, Determination of CO_2 Emissions

III. Impact Analyses

A. Paperwork Reduction Act

The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and have been assigned control number 2060–0258.

This collection of information has an estimated reporting burden averaging 40 hours per response and an estimated annual recordkeeping burden averaging 160 hours per respondent. These estimates include time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The control numbers assigned to collections of information in certain EPA regulations by the OMB have been consolidated under 40 CFR part 9. The EPA finds there is ''good cause'' under Sections 553(b)(B) and 553(d)(3) of the Administrative Procedure Act to amend the applicable table in 40 CFR part 9 to display the OMB control number for this rule without prior notice and comment. Due to the technical nature of the table, further notice and comment would be unnecessary. For additional information, see 58 FR 18014, April 7, 1993, and 58 FR 27472, May 10, 1993.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Information Policy Branch; EPA; 401 M St., SW (Mail Code 2136); Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked ''Attention: Desk Officer for EPA.''

B. Executive Order Requirements

1. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is ''significant'' and therefore subject to OMB review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, OMB has notified EPA that it considers this a ''significant regulatory action'' within the meaning of the Executive Order. The EPA has submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

The revisions to part 75 slightly decrease the overall cost of compliance for the regulated community. Therefore, the Agency did not prepare a Regulatory Impact Analysis (RIA). Revisions to appendix D of part 75, ''Optional SO_2 Emissions Data Protocol for Gas-Fired and Oil-Fired Units,'' reduce the frequency of sampling and analysis of diesel fuel, reducing the cost of SO_2 monitoring for units using No. 2 fuel oil as a backup fuel. Revisions to appendix E of part 75, ''Optional NO_X Emission Estimation Protocol for Gas-Fired Peaking Units and Oil-Fired Peaking Units,'' reduce the amount of testing for gas-fired peaking units and oil-fired peaking units using this optional procedure. A small gas-fired or oil-fired peaking unit using appendix D or appendix E would have monitoring costs reduced by 10 to 40 percent from the cost of the promulgated rule of January 11, 1993.

2. Executive Order 12875

Executive Order 12875 generally prohibits Agencies from issuing regulations not required by statute that impose mandates on State, local, and tribal governments unless federal funding is provided for the direct costs of compliance or the Agency, after consultation with the affected entities, justifies the need for an unfunded mandate. Clean Air Act Section 412(a) required EPA to issue regulations specifying requirements for CEMS and alternative monitoring systems, as well as for recordkeeping and reporting of information from such systems. This direct final rule revises the regulation required under Section 412(a) in order to address various issues that have come to light during early implementation and is therefore a statutorily-required regulation. In addition, as discussed above, the revisions to the regulation do not impose additional costs, but rather slightly decrease the overall cost of compliance for the regulated community. Therefore, the revisions meet the requirements of Executive Order 12875.

C. Regulatory Flexibility Act

Pursuant to Section 605(b) of the Regulatory Flexibility Act, 5 U.S.C. 605(b), the Administrator certifies on April 28, 1995 that this rule revision will not have a significant economic impact on a substantial number of small entities.

The EPA performed an analysis of the effects upon small utilities of the Acid Rain core rules (58 FR 3649, January 11, 1993), including permitting, allowances, and continuous emission monitoring. The earlier document concluded that significant costs would occur to small utilities as a result of statutory requirements. For example, based upon a worst case for model utilities, total regulatory costs could represent as much as 6 to 7 percent of the average value of electricity produced in the year 2000. About one-third of the 105 small utilities currently affected could face impacts of up to this magnitude.

Today's revisions to part 75 have a beneficial impact on small entities by reducing the burden of complying with the Acid Rain Program monitoring requirements for approximately 800 small utility units. Revisions to appendix D of part 75 reduce the frequency of sampling and analysis of diesel fuel, reducing the cost of SO_2 monitoring for units using diesel fuel (No. 2 fuel oil) as a backup fuel. The EPA estimates that this will reduce the cost of complying with monitoring requirements by 15 percent per year for SO_2 monitoring for units using diesel fuel. Revisions to appendix E of part 75 reduce the amount of testing for gas-fired peaking units and oil-fired peaking units. The EPA estimates that these changes will reduce the cost of appendix E testing by one-third for boilers and by one-tenth for stationary gas turbines and diesel reciprocating engines. A small gas-fired or oil-fired peaking unit monitoring using appendix D or appendix E would have monitoring costs reduced by 10 to 40 percent from the cost of the promulgated rule of January 11, 1993.

D. Unfunded Mandates Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (''Unfunded Mandates Act'') (signed into law on March 22, 1995) requires that the Agency prepare a budgetary impact statement before promulgating a rule that includes a Federal mandate that may result in expenditure by State, local, and tribal governments, in aggregate, or by the private sector, of $100 million or more in any one year. Section 203 requires the Agency to establish a plan for obtaining input from and informing, educating, and advising any small governments that may be significantly or uniquely affected by the rule.

Under section 205 of the Unfunded Mandates Act, the Agency must identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a budgetary impact statement must be prepared. The Agency must select from those alternatives the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule, unless the Agency explains why this alternative is not selected or why the selection of this alternative is inconsistent with law.

Because this direct final rule and its associated proposed and interim final rules are estimated to have an impact of less than $100 million in any one year, the Agency has not prepared a budgetary impact statement or specifically addressed the selection of the least costly, most cost-effective, or least burdensome alternative. Because small governments will not be significantly or uniquely affected by the revisions to parts 72 and 75, the Agency is not required to develop a plan with regard to small governments. However, as discussed in this preamble, the rule revisions have the net effect of reducing the burden of part 75 of the Acid Rain regulations on regulated entities, including both investor-owned and State and municipally-owned utilities.

List of Subjects in 40 CFR Parts 9, 72, and 75

Environmental protection, Air pollution control, Carbon dioxide, Continuous emission monitors, Electric utilities, Incorporation by reference, Nitrogen oxides, Reporting and recordkeeping requirements, Sulfur dioxide.

Dated: April 28, 1995.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, parts 9, 72, and 75 of title 40, chapter I, of the Code of Federal Regulations are amended as follows:

PART 9—OMB APPROVALS UNDER THE PAPERWORK REDUCTION ACT

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1321, 1326, 1330, 1344, 1345 (d) and (e), 1361; E.O. 11735, 58 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9, 1857 *et seq.*, 6901–6992k, 7401–7767q, 7542, 9601–9657, 11023, 11048.

2. The table in § 9.1 under the heading ''Continuous Emission Monitoring'' by removing the entries for ''§§ 75.50 through 75.53'' and by adding entries for ''§§ 75.50 through 75.52'' and ''§§ 75.53 through 75.56'' to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR Citation	OMB Control No.
* * * *	*
Continuous Emission Monitoring	
* * * *	*
75.50–75.52	2060–0258
75.53–75.56	2060–0258
* * * *	*

PART 72—PERMITS REGULATION

3. The authority citation for part 72 continues to read as follows:

Authority: 42 U.S.C. 7651, *et seq.*

Subpart A—Acid Rain Program General Provisions

4. Section 72.2 is amended by revising the definitions of ''Calibration gas'', ''Capacity factor'', ''Diesel fuel'', ''Gas-fired'', ''Maximum potential NO_x emission rate'', ''Monitor operating hour'', ''Natural gas'', ''Oil-fired'', ''Peaking unit'', ''Quality assured monitoring operating hour'', ''Stationary gas turbine'' and ''Unit operating hours'', and by adding, in alphabetical order, new definitions for ''Backup fuel'', ''By-pass operating quarter'', ''Diesel-fired unit'', ''Emergency fuel'', ''Excepted monitoring system'', ''Flue gas desulfurization system'', ''Gaseous fuel'', ''Hour before and after'', ''NIST traceable reference material'', ''Ozone nonattainment area'', ''Ozone transport region'', ''Pipeline natural gas'',

''Research gas material'', ''Unit operating day'', and ''Unit operating quarter''; and by removing the definition of ''zero ambient air material'' and adding a definition of ''zero air material'' to read as follows:

§ 72.2 Definitions.

* * * * *

Backup fuel means a fuel for a unit where: (1) For purposes of the requirements of the monitoring exception of appendix E of part 75 of this chapter, the fuel provides less than 10.0 percent of the heat input to a unit during the three calendar years prior to certification testing for the primary fuel and the fuel provides less than 15.0 percent of the heat input to a unit in each of those three calendar years; or the Administrator approves the fuel as a backup fuel; and (2) For all other purposes under the Acid Rain Program, a fuel that is not the primary fuel (expressed in mmBtu) consumed by an affected unit for the applicable calendar year.

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Bypass operating quarter means a calendar quarter during which emissions pass through a stack, duct or flue that bypasses add-on emission controls.

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Calibration gas means: (1) a standard reference material; (2) a NIST traceable reference material; (3) a Protocol 1 gas; (4) a research gas material; or (5) zero air material.

Capacity factor means either: (1) the ratio of a unit's actual annual electric output (expressed in MWe-hr) to the unit's nameplate capacity times 8760 hours, or (2) the ratio of a unit's annual heat input (in million British thermal units or equivalent units of measure) to the unit's maximum design heat input (in million British thermal units per hour or equivalent units of measure) times 8,760 hours.

* * * * *

Diesel-fired unit means, for the purposes of part 75 of this chapter, an oil-fired unit that combusts diesel fuel as its fuel oil, where the supplementary fuel, if any, shall be limited to natural gas or gaseous fuels containing no more sulfur than natural gas.

Diesel fuel means a low sulfur fuel oil of grades 1–D or 2–D, as defined by the American Society for Testing and Materials standard ASTM D975–91, ''Standard Specification for Diesel Fuel Oils,'' grades 1–GT or 2–GT, as defined by ASTM D2880–90a, ''Standard Specification for Gas Turbine Fuel Oils,'' or grades 1 or 2, as defined by ASTM D396–90, ''Standard Specification for Fuel Oils'' (incorporated by reference in § 72.13).

* * * * *

Emergency fuel means either:

(1) For purposes of the requirements for a fuel flowmeter used in an excepted monitoring system under appendix D or E of part 75 of this chapter, the fuel identified by the designated representative in the unit's monitoring plan as the fuel which is combusted only during emergencies where the primary fuel is not available; or

(2) For purposes of the requirement for stack testing for an excepted monitoring system under appendix E of part 75 of this chapter, the fuel identified in the State, local, or Federal permit for a plant and is identified by the designated representative in the unit's monitoring plan as the fuel which is combusted only during emergencies where the primary fuel is not available, as established in a petition under § 75.66 of this chapter.

* * * * *

Excepted monitoring system means a monitoring system that follows the procedures and requirements of appendix D or E of part 75 of this chapter for approved exceptions to the use of continuous emission monitoring systems.

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Flue gas desulfurization system means a type of add-on emission control used to remove sulfur dioxide from flue gas, commonly referred to as a ''scrubber.''

* * * * *

Gaseous fuel means a material that is in the gaseous state at standard atmospheric temperature and pressure conditions and that is combusted to produce heat.

* * * * *

Gas-fired means:

(1) The combustion of:

(i) Natural gas or other gaseous fuel (including coal-derived gaseous fuel), for at least 90.0 percent of the unit's average annual heat input during the previous three calendar years and for at least 85.0 percent of the annual heat input in each of those calendar years; and

(ii) Any fuel other than coal or coal-derived fuel (other than coal-derived gaseous fuel) for the remaining heat input, if any; *provided* that for purposes of part 75 of this chapter, any fuel used other than natural gas, shall be limited to:

(A) Gaseous fuels containing no more sulfur than natural gas; or

(B) Fuel oil.

(2) For purposes of part 75 of this chapter, a unit may initially qualify as gas-fired under the following circumstances:

(i) If the designated representative provides fuel usage data for the unit for the three calendar years immediately prior to submission of the monitoring plan, and if the unit's fuel usage is projected to change on or before January 1, 1995, the designated representative submits a demonstration satisfactory to the Administrator that the unit will qualify as gas-fired under the first sentence of this definition using the years 1995 through 1997 as the three calendar year period; or

(ii) If a unit does not have fuel usage data for one or more of the three calendar years immediately prior to submission of the monitoring plan, the designated representative submits:

(A) The unit's designed fuel usage;

(B) Any fuel usage data, beginning with the unit's first calendar year of commercial operation following 1992;

(C) The unit's projected fuel usage for any remaining future period needed to provide fuel usage data for three consecutive calendar years; and

(D) Demonstration satisfactory to the Administrator that the unit will qualify as gas-fired under the first sentence of this definition using those three consecutive calendar years as the three calendar year period.

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Hour before and after means, for purposes of the missing data substitution procedures of part 75 of this chapter, the quality-assured hourly SO_2 or CO_2 concentration, hourly flow rate, or hourly NO_X emission rate recorded by a certified monitor during the unit operating hour immediately before and the unit operating hour immediately after a missing data period.

Maximum potential NO_X emission rate means the emission rate of nitrogen oxides (in lb/mmBtu) calculated in accordance with section 3 of appendix F of part 75 of this chapter, using the maximum potential nitrogen oxides concentration as defined in section 2 of appendix A of part 75 of this chapter, and either the maximum oxygen concentration (in percent O_2) or the minimum carbon dioxide concentration (in percent CO_2) under all operating conditions of the unit except for unit start-up, shutdown, and upsets.

* * * * *

Monitor operating hour means any unit operating hour or portion thereof over which a CEMS, or other monitoring system approved by the Administrator under part 75 of this chapter is operating, regardless of the number of measurements (i.e., data points) collected during the hour or portion of an hour.

* * * * *

Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) containing 1 grain or less hydrogen sulfide per 100 standard cubic feet, and 20 grains or less total sulfur per 100 standard cubic feet), produced in geological formations beneath the Earth's surface, and maintaining a gaseous state at standard atmospheric temperature and pressure under ordinary conditions.

* * * * *

NIST traceable reference material (NTRM) means a calibration gas mixture tested by and certified by the National Institutes of Standards and Technologies (NIST) to have a certain specified concentration of gases. NTRMs may have different concentrations from those of standard reference materials.

* * * * *

Oil-fired means:

(1) The combustion of:

(i) Fuel oil for more than 10.0 percent of the average annual heat input during the previous three calendar years or for more than 15.0 percent of the annual heat input during any one of those calendar years; and

(ii) Any solid, liquid, or gaseous fuel (including coal-derived gaseous fuel), other than coal or any other coal derived fuel, for the remaining heat input, if any; provided that for purposes of part 75 of this chapter, any fuel used other than fuel oil shall be limited to gaseous fuels containing no more sulfur than natural gas.

(2) For purposes of part 75 of this chapter, a unit that does not have fuel usage data for one or more of the three calendar years immediately prior to submission of the monitoring plan may initially qualify as oil-fired under the following circumstances: the designated representative submits:

(i) Unit design fuel usage,

(ii) The unit's designed fuel usage,

(iii) Any fuel usage data, beginning with the unit's first calendar year of commercial operation following 1992,

(iv) The unit's projected fuel usage for any remaining future period needed to provide fuel usage data for three consecutive calendar years, and

(v) A demonstration satisfactory to the Administrator that the unit will qualify as oil-fired under the first sentence of this definition using those three consecutive calendar years as the three calendar year period.

* * * * *

Ozone nonattainment area means an area designated as a nonattainment area for ozone under subpart C of part 81 of this chapter.

Ozone transport region means the ozone transport region designated under Section 184 of the Act.

* * * * *

Peaking unit means:

(1) A unit that has:

(i) An average capacity factor of no more than 10.0 percent during the previous three calendar years and

(ii) A capacity factor of no more than 20.0 percent in each of those calendar years.

(2) For purposes of part 75 of this chapter, a unit may initially qualify as a peaking unit under the following circumstances:

(i) If the designated representative provides capacity factor data for the unit for the three calendar years immediately prior to submission of the monitoring plan and if the unit's capacity factor is projected to change on or before the certification deadline for NO_X monitoring in § 75.4 of this chapter, the designated representative submits a demonstration satisfactory to the Administrator that the unit will qualify as a peaking unit under the first sentence of this definition using the three calendar years beginning with the year of the certification deadline for NO_X monitoring in § 75.4 of this chapter (either 1995 or 1996) as the three year period; or

(ii) If the unit does not have capacity factor data for any one or more of the three calendar years immediately prior to submission of the monitoring plan, the designated representative submits:

(A) Any capacity factor data, beginning with the unit's first calendar year of commercial operation following the first year of the three calendar years immediately prior to the certification deadline for NO_X monitoring in § 75.4 of this chapter (either 1992 or 1993),

(B) Capacity factor information for the unit for any remaining future period needed to provide capacity factor data for three consecutive calendar years, and

(C) A demonstration satisfactory to the Administrator that the unit will qualify as a peaking unit under the first sentence of this definition using the three consecutive calendar years specified in (2) (ii) (A) and (B) as the three calendar year period.

* * * * *

Pipeline natural gas means natural gas that is provided by a supplier through a pipeline.

* * * * *

Quality-assured monitor operating hour means any unit operating hour or portion thereof over which a certified CEMS, or other monitoring system approved by the Administrator under part 75 of this chapter, is operating:

(1) Within the performance specifications set forth in part 75, appendix A of this chapter and the quality assurance/quality control procedures set forth in part 75, appendix B of this chapter, without unscheduled maintenance, repair, or adjustment; and

(2) In accordance with § 75.10(d), (e), and (f) of this chapter.

* * * * *

Research gas material (RGM) means a calibration gas mixture developed by agreement of a requestor and the National Institutes for Standards and Technologies (NIST) that NIST analyzes and certifies as ''NIST traceable.'' RGMs may have concentrations different from those of standard reference materials.

* * * * *

Stationary gas turbine means a turbine that is not self-propelled and that combusts natural gas, other gaseous fuel with a sulfur content no greater than natural gas, or fuel oil in order to heat inlet combustion air and thereby turn a turbine, in addition to or instead of producing steam or heating water.

* * * * *

Unit operating day means a calendar day in which a unit combusts any fuel.

Unit operating hour means any hour (or fraction of an hour) during which a unit combusts any fuel.

Unit operating quarter means a calendar quarter in which a unit combusts any fuel.

* * * * *

Zero air material means either: (1) a calibration gas certified by the gas vendor not to contain concentrations of either SO_2, NO_X, or total hydrocarbons above 0.1 parts per million (ppm); a concentration of CO above 1 ppm; and a concentration of CO_2 above 400 ppm, or (2) ambient air conditioned and purified by a continuous emission monitoring system for which the continuous emission monitoring system manufacturer or vendor certifies that the particular continuous emission monitoring system model produces conditioned gas that does not contain concentrations of either SO_2 or NO_X above 0.1 ppm or CO_2 above 400 ppm; and that does not contain concentrations of other gases that interfere with instrument readings or cause the instrument to read concentrations of SO_2, NO_X, or CO_2 for a particular continuous emission monitoring system model.

* * * * *

5. Section 72.13 is amended by redesignating paragraphs (a)(8) and

(a)(9) as (a)(9) and (a)(10), and by adding paragraph (a)(8), and by revising newly designated paragraphs (a)(9) and (a)(10) to read as follows:

§ 72.13 Incorporation by reference.

* * * * *

(8) ASTM D2880–90a, Standard Specification for Gas Turbine Fuel Oils, for § 72.2 of this part.

(9) ASTM D4057–88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, for § 72.7 of this part.

(10) ASTM D4294–90, Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy, for § 72.7 of this part.

* * * * *

PART 75—CONTINUOUS EMISSIONS MONITORING

6–7. The authority citation for part 75 is revised to read as follows:

Authority: 42 U.S.C. 7601 and 7651, *et seq.*

§ 75.2 [Amended]

8. Section 75.2 is amended by removing paragraph (b)(4).

9. Section 75.4 is amended by revising the last sentence of paragraph (a) introductory text and by revising paragraphs (a)(1), (a)(2), (a)(3), (a)(4), (b), (c), and (d), by redesignating and revising paragraph (e) as paragraph (h) and by adding new paragraphs (e), (f), and (g) to read as follows:

§ 75.4 Compliance dates.

(a) * * * In accordance with § 75.20, the owner or operator of each existing affected unit shall ensure that all monitoring systems required by this part for monitoring SO_2, NO_X, CO_2, opacity, and volumetric flow are installed and all certification tests are completed not later than the following dates (except as provided in paragraphs (d) through (h) of this section):

(1) For a unit listed in Table 1 of § 73.10(a) of this chapter, November 15, 1993.

(2) For a substitution or a compensating unit that is designated under an approved substitution plan or reduced utilization plan pursuant to § 72.41 or § 72.43 of this chapter, or for a unit that is designated an early election unit under an approved NO_X compliance plan pursuant to part 76 of this chapter, that is not conditionally approved and that is effective for 1995, the earlier of the following dates:

(i) January 1, 1995; or

(ii) 90 days after the issuance date of the Acid Rain permit (or date of approval of permit revision) that governs the unit and contains the approved substitution plan, reduced utilization plan, or NO_X compliance plan.

(3) For either a Phase II unit, other than a gas-fired unit or an oil-fired unit, or a substitution or compensating unit that is not a substitution or compensating unit under paragraph (a)(2) of this section: January 1, 1995.

(4) For a gas-fired Phase II unit or an oil-fired Phase II unit, January 1, 1995, except that installation and certification tests for continuous emission monitoring systems for NO_X and CO_2 or excepted monitoring systems for NO_X under appendix E or CO_2 estimation under appendix G of this part shall be completed as follows:

(i) For an oil-fired Phase II unit or a gas-fired Phase II unit located in an ozone nonattainment area or the ozone transport region, not later than July 1, 1995; or

(ii) For an oil-fired Phase II unit or a gas-fired Phase II unit not located in an ozone nonattainment area or the ozone transport region, not later than January 1, 1996.

(5) * * *

(b) In accordance with § 75.20, the owner or operator of each new affected unit shall ensure that all monitoring systems required under this part for monitoring of SO_2, NO_X, CO_2, opacity, and volumetric flow are installed and all certification tests are completed on or before the later of the following dates:

(1) January 1, 1995, except that for a gas-fired unit or oil-fired unit located in an ozone nonattainment area or the ozone transport region, the date for installation and completion of all certification tests for NO_X and CO_2 monitoring systems shall be July 1, 1995 and for a gas-fired unit or an oil-fired unit not located in an ozone nonattainment area or the ozone transport region, the date for installation and completion of all certification tests for NO_X and CO_2 monitoring systems shall be January 1, 1996; or

(2) Not later than 90 days after the date the unit commences commercial operation, notice of which date shall be provided under subpart G of this part.

(c) In accordance with § 75.20, the owner or operator of any unit affected under any paragraph of § 72.6(a)(3) (ii) through (vii) of this chapter shall ensure that all monitoring systems required under this part for monitoring of SO_2, NO_X, CO_2, opacity, and volumetric flow are installed and all certification tests are completed on or before the later of the following dates:

(1) January 1, 1995, except that for a gas-fired unit or oil-fired unit located in an ozone nonattainment area or the ozone transport region, the date for installation and completion of all certification tests for NO_X and CO_2 monitoring systems shall be July 1, 1995 and for a gas-fired unit or an oil-fired unit not located in an ozone nonattainment area or the ozone transport region, the date for installation and completion of all certification tests for NO_X and CO_2 monitoring systems shall be January 1, 1996; or

(2) Not later than 90 days after the date the unit becomes subject to the requirements of the Acid Rain Program, notice of which date shall be provided under subpart G of this part.

(d) In accordance with § 75.20, the owner or operator of an existing unit that is shutdown and is not yet operating by the applicable dates listed in paragraph (a) of this section, shall ensure that all monitoring systems required under this part for monitoring of SO_2, NO_X, CO_2, opacity, and volumetric flow are installed and all certification tests are completed not later than the earlier of 45 unit operating days or 180 calendar days after the date that the unit recommences commercial operation of the affected unit, notice of which date shall be provided under subpart G of this part. The owner or operator shall determine and report SO_2 concentration, NO_X emission rate, CO_2 concentration, and flow data for all unit operating hours after the applicable compliance date in paragraph (a) of this section until all required certification tests are successfully completed using either:

(1) The maximum potential concentration of SO_2, the maximum potential NO_X emission rate, the maximum potential flow rate, as defined in section 2.1 of appendix A of this part, or the maximum CO_2 concentration used to determine the maximum potential concentration of SO_2 in section 2.1.1.1 of appendix A of this part; or

(2) Reference methods under § 75.22(b); or

(3) Another procedure approved by the Administrator pursuant to a petition under § 75.66.

(e) In accordance with § 75.20, if the owner or operator of an existing unit completes construction of a new stack, flue, or flue gas desulfurization system after the applicable deadline in paragraph (a) of this section, then the owner or operator shall ensure that all monitoring systems required under this part for monitoring SO_2, NO_X, CO_2, opacity, and volumetric flow are installed on the new stack or duct and all certification tests are completed not later than 90 calendar days after the date that emissions first exit to the atmosphere through the new stack, flue, or flue gas desulfurization system, notice of which date shall be provided under subpart G of this part. Until emissions first pass through the new stack, flue or flue gas desulfurization system, the unit is subject to the appropriate deadline in paragraph (a) of this section. The owner or operator shall determine and report SO_2 concentration, NO_X emission rate, CO_2 concentration, and flow data for all unit operating hours after emissions first pass through the new stack, flue, or flue gas desulfurization system until all required certification tests are successfully completed using either:

(1) The appropriate value for substitution of missing data upon recertification pursuant to § 75.20(b)(3); or

(2) Reference methods under § 75.22(b) of this part; or

(3) Another procedure approved by the Administrator pursuant to a petition under § 75.66.

(f) In accordance with § 75.20, the owner or operator of a gas-fired or oil-fired peaking unit, if planning to use appendix E of this part, shall ensure that the required certification tests for excepted monitoring systems under appendix E are completed for backup fuel as defined in § 72.2 of this chapter by no later than the later of: 30 unit operating days after the date that the unit first combusted that backup fuel after the certification testing of the primary fuel; or The deadline in paragraph (a) of this section. The owner or operator shall determine and report NO_X emission rate data for all unit operating hours that the backup fuel is combusted after the applicable compliance date in paragraph (a) of this section until all required certification tests are successfully completed using either:

(1) The maximum potential NO_X emission rate; or

(2) Reference methods under § 75.22(b) of this part; or

(3) Another procedure approved by the Administrator pursuant to a petition under § 75.66.

(g) In accordance with § 75.20, whenever the owner or operator of a gas-fired or oil-fired unit uses an excepted monitoring system under appendix D or E of this part and combusts emergency fuel as defined in § 72.2 of this chapter, then the owner or operator shall ensure that a fuel flowmeter measuring emergency fuel is installed and the required certification tests for excepted monitoring systems are completed by no later than 30 unit operating days after the first date after January 1, 1995 that the unit combusts emergency fuel. For all unit operating hours that the unit combusts emergency fuel after January 1, 1995 until the owner or operator installs a flowmeter for emergency fuel and successfully completes all required certification tests, the owner or operator shall determine and report SO_2 mass emission data using either:

(1) The maximum potential fuel flow rate, as described in appendix D of this part, and the maximum sulfur content of the fuel, as described in section 2.1.1.1 of appendix A of this part;

(2) Reference methods under § 75.22(b) of this part; or

(3) Another procedure approved by the Administrator pursuant to a petition under § 75.66.

(h) In accordance with § 75.20, the owner or operator of a unit with a qualifying Phase I technology shall ensure that all certification tests for the inlet and outlet SO_2-diluent continuous emission monitoring systems are completed no later than January 1, 1997 if the unit with a qualifying Phase I technology requires the use of an inlet SO_2-diluent continuous emission monitoring system for the purpose of monitoring SO_2 emissions removal from January 1, 1997 through December 31, 1999.

10. Section 75.5 is amended by revising paragraph (e) and by adding paragraph (f) to read as follows:

§ 75.5 Prohibitions.

* * * * *

(e) No owner or operator of an affected unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording SO_2, NO_X, or CO_2 emissions discharged to the atmosphere, except for periods of recertification, or periods when calibration, quality assurance, or maintenance is performed pursuant to § 75.21 and appendix B of this part.

(f) No owner or operator of an affected unit shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, the continuous opacity monitoring system, or any other approved emission monitoring system under this part, except under any one of the following circumstances:

(1) During the period that the unit is covered by an approved retired unit exemption under § 72.8 of this chapter that is in effect; or

(2) The owner or operator is monitoring emissions from the unit with another certified monitoring system that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(3) The designated representative submits notification of the date of recertification testing of a replacement monitoring system in accordance with §§ 75.20 and 75.61, and the owner or operator recertifies thereafter a replacement monitoring system in accordance with § 75.20.

11. Section 75.6 is amended by revising paragraphs (a), (b)(1) through (b)(6); by removing paragraphs (b)(7) through (b)(9); and by adding paragraphs (c), (d), and (e) to read as follows:

§ 75.6 Incorporation by reference.

* * * * * *

(a) The following materials are available for purchase from the following addresses: American Society for Testing and Material (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103; and the University Microfilms International 300 North Zeeb Road, Ann Arbor, Michigan 48106.

(1) ASTM D129–91, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), for appendices A and D of this part.

(2) ASTM D240–87 (Reapproved 1991), Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, for appendices A, D and F of this part.

(3) ASTM D287–82 (Reapproved 1987), Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method), for appendix D of this part.

(4) ASTM D388–92, Standard Classification of Coals by Rank, incorporation by reference for appendix F of this part.

(5) ASTM D941–88, Standard Test Method for Density and Relative Density (Specific Gravity) of Liquids by Lipkin Bicapillary Pycnometer, for appendix D of this part.

(6) ASTM D1072–90, Standard Test Method for Total Sulfur in Fuel Gases, for appendix D of this part.

(7) ASTM D1217–91, Standard Test Method for Density and Relative Density (Specific Gravity) of Liquids by Bingham Pycnometer, for appendix D of this part.

(8) ASTM D1250–80 (Reapproved 1990), Standard Guide for Petroleum Measurement Tables, for appendix D of this part.

(9) ASTM D1298–85 (Reapproved 1990), Standard Practice for Density, Relative Density (Specific Gravity) or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method, for appendix D of this part.

(10) ASTM D1480–91, Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Bingham Pycnometer, for appendix D of this part.

(11) ASTM D1481–91, Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Lipkin Bicapillary Pycnometer, for appendix D of this part.

(12) ASTM D1552–90, Standard Test Method for Sulfur in Petroleum Products (High Temperature Method), for appendices A and D of the part.

(13) ASTM D1826–88, Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, for appendix F of this part.

(14) ASTM D1945–91, Standard Test Method for Analysis of Natural Gas by Gas Chromatography, for appendices F and G of this part.

(15) ASTM D1946–90, Standard Practice for Analysis of Reformed Gas by Gas Chromatography, for appendices F and G of this part.

(16) ASTM D1989–92, Standard Test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters, for appendix F of this part.

(17) ASTM D2013–86, Standard Method of Preparing Coal Samples for Analysis, for § 75.15 and appendix F of this part.

(18) ASTM D2015–91, Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter, for § 75.15 and appendices A, D and F of this part.

(19) ASTM D2234–89, Standard Test Methods for Collection of a Gross Sample of Coal, for § 75.15 and appendix F of this part.

(20) ASTM D2382–88, Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), for appendices D and F of this part.

(21) ASTM D2502–87, Standard Test Method for Estimation of Molecular Weight (Relative Molecular Mass) of Petroleum Oils from Viscosity Measurements, for appendix G of this part.

(22) ASTM D2503–82 (Reapproved 1987), Standard Test Method for Molecular Weight (Relative Molecular Mass) of Hydrocarbons by Thermoelectric Measurement of Vapor Pressure, for appendix G of this part.

(23) ASTM D2622–92, Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry, for appendices A and D of this part.

(24) ASTM D3174–89, Standard Test Method for Ash in the Analysis Sample of Coal and Coke From Coal, for appendix G of this part.

(25) ASTM D3176–89, Standard Practice for Ultimate Analysis of Coal and Coke, for appendices A and F of this part.

(26) ASTM D3177–89, Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke, for § 75.15 and appendix A of this part.

(27) ASTM D3178–89, Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, for appendix G of this part.

(28) ASTM D3238–90, Standard Test Method for Calculation of Carbon Distribution and Structural Group Analysis of Petroleum Oils by the n-d-M Method, for appendix G of this part.

(29) ASTM D3246–81 (Reapproved 1987), Standard Test Method for Sulfur in Petroleum Gas By Oxidative Microcoulometry, for appendix D of this part.

(30) ASTM D3286–91a, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, for appendix F of this part.

(31) ASTM D3588–91, Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density (Specific Gravity) of Gaseous Fuels, for appendix F of this part.

(32) ASTM D4052–91, Standard Test Method for Density and Relative Density of Liquids by Digital Density Meter, for appendix D of this part.

(33) ASTM D4057–88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, for appendix D of this part.

(34) ASTM D4177–82 (Reapproved 1990), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, for appendix D of this part.

(35) ASTM D4239–85, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, for § 75.15 and appendix A of this part.

(36) ASTM D4294–90, Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy, for appendices A and D of this part.

(37) ASTM D4468–85 (Reapproved 1989), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, for appendix D of this part.

(38) ASTM D4891–89, Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion, for appendix F of this part.

(39) ASTM D5291–92, Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants, for appendix G of this part.

(40) ASTM D5504–94, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, for appendix D of this part.

(b) * * *

(1) ASME MFC–3M–1989 with September 1990 Errata, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, for § 75.20 and appendix D of this part.

(2) ASME MFC–4M–1986 (Reaffirmed 1990), Measurement of Gas Flow by Turbine Meters, for § 75.20 and appendix D of this part.

(3) ASME-MFC–5M–1985, Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters, for § 75.20 and appendix D of this part.

(4) ASME MFC–6M–1987 with June 1987 Errata, Measurement of Fluid Flow in Pipes Using Vortex Flow Meters, for § 75.20 and appendix D of this part.

(5) ASME MFC–7M–1987 (Reaffirmed 1992), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles, for § 75.20 and appendix D of this part.

(6) ASME MFC–9M–1988 with December 1989 Errata, Measurement of Liquid Flow in Closed Conduits by Weighing Method, for § 75.20 and appendix D of this part.

(c) The following materials are available for purchase from the American National Standards Institute (ANSI), 11 W. 42nd Street, New York NY 10036: ISO 8316: 1987(E) Measurement of Liquid Flow in Closed Conduits—Method by Collection of the Liquid in a Volumetric Tank, for § 75.20 and appendices D and E of this part.

(d) The following materials are available for purchase from the following address: Gas Processors Association (GPA), 6526 East 60th Street, Tulsa, Oklahoma 74145:

(1) GPA Standard 2172–86, Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis, for appendices D, E, and F of this part.

(2) GPA Standard 2261–90, Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography, for appendices D, F, and G of this part.

(e) The following materials are available for purchase from the following address: American Gas Association, 1515 Wilson Boulevard, Arlington VA 22209: American Gas Association Report No. 3: Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids, Part 1: General Equations and Uncertainty

Guidelines (October 1990 Edition), Part 2: Specification and Installation Requirements (February 1991 Edition) and Part 3: Natural Gas Applications (August 1992 Edition), for § 75.20 and appendices D and E of this part.

12. Section 75.8 is added to Subpart A to read as follows:

§ 75.8 Relative accuracy and availability analysis.

(a) The Agency will conduct an analysis of monitoring data submitted to EPA under this part between November 15, 1993 and December 31, 1996 to evaluate the appropriateness of the current performance specifications for relative accuracy and availability trigger conditions for missing data substitution for SO_2 and CO_2 pollutant concentration monitors, flow monitors, and NO_X continuous emission monitoring systems.

(b) Prior to July 1, 1997, the Agency will prepare a report evaluating quarterly report data for the period between January 1, 1994 and December 31, 1996 and initial certification test data. Based upon this evaluation, the Administrator will sign for publication in the **Federal Register**, either:

(1) A notice that the Agency has completed its analysis and has determined that retaining the current performance specifications for relative accuracy and availability trigger conditions are appropriate; or

(2) A notice that the Agency will develop a proposed rule, based on the results of the study, proposing alternatives to the current performance specifications for relative accuracy and availability trigger conditions.

(c) If the Administrator signs a notice that the Agency will develop a proposed rule, the Administrator will:

(1) Sign a notice of proposed rulemaking by October 31, 1997; and

(2) Sign a notice of final rulemaking by October 31, 1998.

Subpart B—Monitoring Provisions

13. Section 75.10 is amended by revising paragraphs (a)(1), (a)(2), (a)(3), (d), (e), and (f) to read as follows:

§ 75.10 General operating requirements.

(a) * * *

(1) The owner or operator shall install, certify, operate, and maintain, in accordance with all the requirements of this part, a SO_2 continuous emission monitoring system and a flow monitoring system with the automated data acquisition and handling system for measuring and recording SO_2 concentration (in ppm), volumetric gas flow (in scfh), and SO_2 mass emissions (in lb/hr) discharged to the atmosphere, except as provided in §§ 75.11 and 75.16 and subpart E of this part;

(2) The owner or operator shall install, certify, operate, and maintain, in accordance with all the requirements of this part, a NO_X continuous emission monitoring system (consisting of a NO_X pollutant concentration monitor and an O_2 or CO_2 diluent gas monitor) with the automated data acquisition and handling system for measuring and recording NO_X concentration (in ppm), O_2 or CO_2 concentration (in percent O_2 or CO_2) and NO_X emission rate (in lb/mmBtu) discharged to the atmosphere, except as provided in §§ 75.12 and 75.17 and subpart E of this part. The owner or operator shall account for total NO_X emissions, both NO and NO_2, either by monitoring for both NO and NO_2 or by monitoring for NO only and adjusting the emissions data to account for NO_2;

(3) The owner or operator shall determine CO_2 emissions by using one of the following options, except as provided in § 75.13 and subpart E of this part:

(i) The owner or operator shall install, certify, operate, and maintain, in accordance with all the requirements of this part, a CO_2 continuous emission monitoring system and a flow monitoring system with the automated data acquisition and handling system for measuring and recording CO_2 concentration (in ppm or percent), volumetric gas flow (in scfh), and CO_2 mass emissions (in tons/hr) discharged to the atmosphere;

(ii) The owner or operator shall determine CO_2 emissions based on the measured carbon content of the fuel and the procedures in appendix G of this part to estimate CO_2 emissions (in ton/day) discharged to the atmosphere; or

(iii) The owner or operator shall install, certify, operate, and maintain, in accordance with all the requirements of this part, a flow monitoring system and a CO_2 continuous emission monitoring system using an O_2 concentration monitor in order to determine CO_2 emissions using the procedures in appendix F of this part with the automated data acquisition and handling system for measuring and recording O_2 concentration (in percent), CO_2 concentration (in percent), volumetric gas flow (in scfh), and CO_2 mass emissions (in tons/hr) discharged to the atmosphere; and

* * * * *

(d) *Primary equipment hourly operating requirements.* The owner or operator shall ensure that all continuous emission and opacity monitoring systems required by this part are in operation and monitoring unit emissions or opacity at all times that the affected unit combusts any fuel except as provided in § 75.11(e) and during periods of calibration, quality assurance, or preventive maintenance, performed pursuant to § 75.21 and appendix B of this part, periods of repair, periods of backups of data from the data acquisition and handling system, or recertification performed pursuant to § 75.20. The owner or operator shall also ensure, subject to the exceptions above in this paragraph, that all continuous opacity monitoring systems required by this part are in operation and monitoring opacity during the time following combustion when fans are still operating, unless fan operation is not required to be included under any other applicable Federal, State, or local regulation, or permit. The owner or operator shall ensure that the following requirements are met:

(1) The owner or operator shall ensure that each continuous emission monitoring system and component thereof is capable of completing a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-min interval. The owner or operator shall reduce all SO_2 concentrations, volumetric flow, SO_2 mass emissions, SO_2 emission rate in lb/mmBtu (if applicable), CO_2 concentration, O_2 concentration, CO_2 mass emissions (if applicable), NO_X concentration, and NO_X emission rate data collected by the monitors to hourly averages. Hourly averages shall be computed using at least one data point in each fifteen minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour) if data are unavailable as a result of the performance of calibration, quality assurance, or preventive maintenance activities pursuant to § 75.21 and appendix B of this part, backups of data from the data acquisition and handling system, or recertification, pursuant to § 75.20. The owner or operator shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour.

(2) The owner or operator shall ensure that each continuous opacity monitoring system is capable of completing a minimum of one cycle of sampling and analyzing for each successive 10-sec

period and one cycle of data recording for each successive 6-min period. The owner or operator shall reduce all opacity data to 6-min averages calculated in accordance with the provisions of part 51, appendix M of this chapter, except where the applicable State implementation plan or operating permit requires a different averaging period, in which case the State requirement shall satisfy this Acid Rain Program requirement.

(3) Failure of an SO_2, CO_2 or O_2 pollutant concentration monitor, flow monitor, or NO_X continuous emission monitoring system, to acquire the minimum number of data points for calculation of an hourly average in paragraph (d)(1) of this section, shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. An hourly average NO_X or SO_2 emission rate in lb/mmBtu is valid only if the minimum number of data points are acquired by both the pollutant concentration monitor (NO_X or SO_2) and the diluent monitor (CO_2 or O_2). Except for SO_2 emission rate data in lb/mmBtu, if a valid hour of data is not obtained, the owner or operator shall estimate and record emission or flow data for the missing hour by means of the automated data acquisition and handling system, in accordance with the applicable procedure for missing data substitution in subpart D of this part.

(e) *Optional backup monitor requirements.* If the owner or operator chooses to use two or more continuous emission monitoring systems, each of which is capable of monitoring the same stack or duct at a specific affected unit, or group of units using a common stack, then the owner or operator shall designate one monitoring system as the primary monitoring system, and shall record this information in the monitoring plan, as provided for in § 75.53. The owner or operator shall designate the other monitoring system(s) as backup monitoring system(s) in the monitoring plan. The backup monitoring system(s) shall be designated as redundant backup monitoring system(s), non-redundant backup monitoring system(s), or reference method backup system(s), as described in § 75.20(d). When the certified primary monitoring system is operating and not out-of-control as defined in § 75.24, only data from the certified primary monitoring system shall be reported as valid, quality-assured data. Thus, data from the backup monitoring system may be reported as valid, quality-assured data only when the backup is operating and not out-of-control as defined in § 75.24 (or in the applicable reference method in appendix A of part 60 of this chapter) and when the certified primary monitoring system is not operating (or is operating but out-of-control). A particular monitor may be designated both as a certified primary monitor for one unit and as a certified redundant backup monitor for another unit.

(f) *Minimum measurement capability requirement.* The owner or operator shall ensure that each continuous emission monitoring system and component thereof is capable of accurately measuring, recording, and reporting data, and shall not incur a full scale exceedance, except as provided in sections 2.1.1.4, 2.1.2.4, and 2.1.4 of appendix A of this part.

* * * * *

14. Section 75.11 is amended by revising paragraphs (c) and (d), redesignating paragraph (e) as paragraph (f), and reserving paragraph (e) to read as follows:

§ 75.11 Specific provisions for monitoring SO_2 emissions (SO_2 and flow monitors).

* * * * *

(c) *Unit with no location for a flow monitor meeting siting requirements.* Where no location exists that satisfies the minimum physical siting criteria in appendix A to this part for installation of a flow monitor in either the stack or the ducts serving an affected unit or installation of a flow monitor in either the stack or ducts is demonstrated to the satisfaction of the Administrator to be technically infeasible, either:

(1) The designated representative shall petition the Administrator for an alternative method for monitoring volumetric flow in accordance with § 75.66; or

(2) The owner or operator shall construct a new stack or modify existing ductwork to accommodate the installation of a flow monitor, and the designated representative shall petition the Administrator for an extension of the required certification date given in § 75.4 and approval of an interim alternative flow monitoring methodology in accordance with § 75.66. The Administrator may grant existing Phase I affected units an extension to January 1, 1995, and existing Phase II affected units an extension to January 1, 1996 for the submission of the certification application for the purpose of constructing a new stack or making substantial modifications to ductwork for installation of a flow monitor; or

(3) The owner or operator shall install a flow monitor in any existing location in the stack or ducts serving the affected unit at which the monitor can achieve the performance specifications of this part.

(d) *Gas-fired units and oil-fired units.* The owner or operator of an affected unit that qualifies as a gas-fired or oil-fired unit, as defined in § 72.2 of this chapter, based on information submitted by the designated representative in the monitoring plan, shall measure and record SO_2 emissions using one of the following methods:

(1) Meet the general operating requirements in § 75.10 for an SO_2 continuous emission monitoring system and flow monitoring system except as provided in paragraph (e) of this section. When the owner or operator uses an SO_2 continuous emission monitoring system and flow monitoring system to monitor SO_2 mass emissions from an affected unit, the owner or operator shall comply with applicable monitoring provisions in paragraph (a) of this section; or

(2) Provide other information satisfactory to the Administrator using the procedure specified in appendix D to this part for estimating hourly SO_2 mass emissions.

(e) [Reserved]

* * * * *

15. Section 75.12 is amended by revising paragraph (c) to read as follows:

§ 75.12 Specific provisions for monitoring NO_X emissions (NO_X and diluent gas monitors).

* * * * *

(c) *Gas-fired peaking units or oil-fired peaking units.* The owner or operator of an affected unit that qualifies as a gas-fired peaking unit or oil-fired peaking unit, as defined in § 72.2 of this chapter, based on information submitted by the designated representative in the monitoring plan shall comply with one of the following:

(1) Meet the general operating requirements in § 75.10 for a NO_X continuous emission monitoring system; or

(2) Provide information satisfactory to the Administrator using the procedure specified in appendix E of this part for estimating hourly NO_X emission rate. However, if in the years after certification of an excepted monitoring system under appendix E of this part, a unit's operations exceed a capacity factor of 20 percent in any calendar year or exceed a capacity factor of 10.0 percent averaged over three years, the owner or operator shall install, certify, and operate a NO_X continuous emission monitoring system no later than December 31 of the following calendar year.

* * * * *

16. Section 75.13 is amended by revising paragraphs (a) and (c) to read as follows:

§ 75.13 Specific provisions for monitoring CO_2 emissions.

(a) *CO_2 continuous emission monitoring system.* If the owner or operator chooses to use the continuous emission monitoring method, then the owner or operator shall meet the general operating requirements in § 75.10 for a CO_2 continuous emission monitoring system and flow monitoring system for each affected unit. The owner or operator shall comply with the applicable provisions specified in § 75.11 (a) through (e) or § 75.16, except that the phrase ''SO_2 continuous emission monitoring system'' is replaced with ''CO_2 continuous emission monitoring system,'' the term ''maximum potential concentration for SO_2'' is replaced with ''maximum CO_2 concentration,'' and the phrase ''SO_2 mass emissions'' is replaced with ''CO_2 mass emissions.''

* * * * *

(c) *Determination of CO_2 mass emissions using an O_2 monitor according to appendix F.* If the owner or operator chooses to use the appendix F method, then the owner or operator may determine hourly CO_2 concentration and mass emissions with a flow monitoring system, a continuous O_2 concentration monitor, fuel F and F_c factors, and where O_2 concentration is measured on a dry basis, hourly corrections for the moisture content of the flue gases, using the methods and procedures specified in appendix F to this part. For units using a common stack, multiple stack, or by-pass stack, the owner or operator may use the provisions of § 75.16, except that the phrase ''SO_2 continuous emission monitoring system'' is replaced with ''CO_2 continuous emission monitoring system,'' the term ''maximum potential concentration of SO'' is replaced with ''maximum CO_2 concentration,'' and the phrase ''SO_2 mass emissions'' is replaced with ''CO_2 mass emissions.''

17. Section 75.14 is amended by revising paragraph (c) to read as follows:

§ 75.14 Specific provisions for monitoring opacity.

* * * * *

(c) *Gas-fired units.* The owner or operator of an affected unit that qualifies as gas-fired, as defined in § 72.2 of this chapter, based on information submitted by the designated representative in the monitoring plan is exempt from the opacity monitoring requirements of this part.

* * * * *

18. Section 75.15 is amended by revising paragraphs (a) introductory text, (a)(1), (a)(2), and Equations 5 and 7 in paragraph (b)(1) to read as follows:

§ 75.15 Specific provisions for monitoring SO_2 emissions removal by qualifying Phase I technology.

(a) *Additional monitoring provisions.* In addition to the SO_2 monitoring requirements in § 75.11 or § 75.16, for the purposes of adequately monitoring SO_2 emissions removal by qualifying Phase I technology operated pursuant to § 72.42 of this chapter, the owner or operator shall, except where specified below, use both an inlet SO_2-diluent continuous emission monitoring system and an outlet SO_2-diluent continuous emission monitoring system, consisting of an SO_2 pollutant concentration monitor and a diluent CO_2 or O_2 monitor. (The outlet SO_2-diluent continuous emission monitoring system may consist of the same SO_2 pollutant concentration monitor that is required under § 75.11 or § 75.16 for the measurement of SO_2 emissions discharged to the atmosphere and the diluent monitor used as part of the NO_X continuous emission monitoring system that is required under § 75.12 or § 75.17 for the measurement of NO_X emissions discharged into the atmosphere.) During the period when required to measure emissions removal efficiency, from January 1, 1997 through December 31, 1999, the owner or operator shall meet the general operating requirements in § 75.10 for both the inlet and the outlet SO_2-diluent continuous emission monitoring systems, and in addition, the owner or operator shall comply with the monitoring provisions in this section. On January 1, 2000, the owner or operator may cease operating and/or reporting on the inlet SO_2-diluent continuous emission monitoring system results for the purposes of the Acid Rain Program.

(1) *Pre-combustion technology.* The owner or operator of an affected unit for which a precombustion technology has been employed for the purpose of meeting qualifying Phase I technology requirements shall use sections 4 and 5 of Method 19 in appendix A of part 60 of this chapter to estimate, daily, for the purposes of this part, the percentage SO_2 removal efficiency from such technology, and shall substitute the following ASTM methods for sampling, preparation, and analysis of coal for those cited in Method 19: ASTM D2234–89, Standard Test Method for Collection of a Gross Sample of Coal (Type I, Conditions A, B, or C and systematic spacing), ASTM D2013–86, Standard Method of Preparing Coal Samples for Analysis, ASTM D2015–91, Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Calorimeter, and ASTM D3177–89, Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke, or ASTM D4239–85, Standard Test Method for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods. Each of the preceding ASTM methods is incorporated by reference in § 75.6.

(2) *Combustion technology.* The owner or operator of an affected unit for which a combustion technology has been installed and operated for the purpose of meeting qualifying Phase I technology requirements shall use the coal sampling and analysis procedures in paragraph (a)(1) of this section and Equation 5 in paragraph (b) of this section to estimate the percentage SO_2 removal efficiency from such technology.

* * * * *

(b) * * *

(1) * * *

$$\%R_c = 100\left[1.0 - \frac{E_{co}}{E_{ci}}\right] \qquad \text{(Eq. 5)}$$

where,

E_{co}=Average hourly SO_2 emission rate in lb/mmBtu, measured at the outlet of the combustion emission controls during the calendar year, calculated from Equation 6.

E_{ci}=Average hourly SO_2 emission rate in lb/mmBtu, determined by coal sampling and analysis according to the methods and procedures in paragraph (a)(1) of this section, calculated from Equation 7.

(Eq. 6) * * *

$$E_{ci} = \sum_{j=1}^{p} E_{icj} \qquad \text{(Eq. 7)}$$

where,

E_{icj}=Each average hourly SO_2 emission rate in lb/mmBtu, determined by the coal sampling and analysis methods and procedures in paragraph (a)(1) of this section and calculated using appendix A, Method 19 of part 60 of this chapter, performed once a day.

p=Total unit operation hours during which coal sampling and analysis is performed to determine SO_2 emissions at the inlet to the combustion controls.

* * * * *

19. Section 75.16 is revised to read as follows:

§ 75.16 Special provisions for monitoring emissions from common, by-pass, and multiple stacks for SO_2 emissions and heat input determinations.

(a) *Phase I common stack procedures.* Prior to January 1, 2000, the following procedures shall be used when more than one unit utilize a common stack:

(1) *Only Phase I units or only Phase II units using common stack.* When a Phase I unit uses a common stack with one or more other Phase I units, but no other units, or when a Phase II unit uses a common stack with one or more Phase II units, but no other units, the owner or operator shall either:

(i) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the duct to the common stack from each affected unit; or

(ii) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the common stack; and

(A) Combine emissions for the affected units for recordkeeping and compliance purposes; or

(B) Provide information satisfactory to the Administrator on methods for apportioning SO_2 mass emissions measured in the common stack to each of the affected units. The designated representative shall provide the information to the Administrator through a petition submitted under § 75.66. The Administrator may approve such substitute methods for apportioning SO_2 mass emissions measured in a common stack whenever the method ensures complete and accurate accounting of all emissions regulated under this part.

(2) *Phase I unit using common stack with non-Phase I unit(s).* When one or more Phase I units uses a common stack with one or more Phase II or nonaffected units, the owner or operator shall either:

(i) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the duct to the common stack from each affected unit; or

(ii) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the common stack; and

(A) Designate any Phase II unit(s) as a substitution or compensating unit(s) accordance with part 72 of this chapter and any nonaffected unit(s) as opt-in units in accordance with part 74 of this chapter and combine emissions for recordkeeping and compliance purposes; or

(B) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the duct from each Phase II or nonaffected unit; calculate SO_2 mass emissions from the Phase I units as the difference between SO_2 mass emissions measured in the common stack and SO_2 mass emissions measured in the ducts of the Phase II and nonaffected units; record and report the calculated SO_2 mass emissions from the Phase I units; and combine emissions for the Phase I units for compliance purposes; or

(C) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the duct from each Phase I or nonaffected unit; calculate SO_2 mass emissions from the Phase II units as the difference between SO_2 mass emissions measured in the common stack and SO_2 mass emissions measured in the ducts of the Phase I and nonaffected units; and combine emissions for the Phase II units for recordkeeping and compliance purposes; or

(D) Record the combined emissions from all units as the combined SO_2 mass emissions for the Phase I units for recordkeeping and compliance purposes; or

(E) Provide information satisfactory to the Administrator on methods for apportioning SO_2 mass emissions measured in the common stack to each of the units using the common stack. The designated representative shall provide the information to the Administrator through a petition submitted under § 75.66. The Administrator may approve such substitute methods for apportioning SO_2 mass emissions measured in a common stack whenever the method ensures complete and accurate accounting of all emissions regulated under this part.

(3) *Phase II unit using common stack with non-affected unit(s).* When one or more Phase II units uses a common stack with one or more nonaffected units, the owner or operator shall follow the procedures in paragraph (b)(2) of this section.

(b) *Phase II common stack procedures.* On or after January 1, 2000, the following procedures shall be used when more than one unit uses a common stack:

(1) *Unit utilizing common stack with other affected unit(s).* When a Phase I or Phase II affected unit utilizes a common stack with one or more other Phase I or Phase II affected units, but no nonaffected units, the owner or operator shall either:

(i) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the duct to the common stack from each affected unit; or

(ii) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the common stack; and

(A) Combine emissions for the affected units for recordkeeping and compliance purposes; or

(B) Provide information satisfactory to the Administrator on methods for apportioning SO_2 mass emissions measured in the common stack to each of the Phase I and Phase II affected units. The designated representative shall provide the information to the Administrator through a petition submitted under § 75.66. The Administrator may approve such substitute methods for apportioning SO_2 mass emissions measured in a common stack whenever the method ensures complete and accurate accounting of all emissions regulated under this part.

(2) *Unit utilizing common stack with nonaffected unit(s).* When one or more Phase I or Phase II affected units utilizes a common stack with one or more nonaffected units, the owner or operator shall either:

(i) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the duct to the common stack from each Phase I and Phase II unit; or

(ii) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the common stack; and

(A) Designate the nonaffected units as opt-in units in accordance with part 74 of this chapter and combine emissions for recordkeeping and compliance purposes; or

(B) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in the duct from each nonaffected unit; determine SO_2 mass emissions from the affected units as the difference between SO_2 mass emissions measured in the common stack and SO_2 mass emissions measured in the ducts of the nonaffected units; and combine emissions for the Phase I and Phase II affected units for recordkeeping and compliance purposes; or

(C) Record the combined emissions from all units as the combined SO_2 mass emissions for the Phase I and Phase II affected units for recordkeeping and compliance purposes; or

(D) Petition through the designated representative and provide information satisfactory to the Administrator on methods for apportioning SO_2 mass emissions measured in the common stack to each of the units using the common stack. The Administrator may approve such demonstrated substitute methods for apportioning SO_2 mass emissions measured in a common stack whenever the demonstration ensures complete and accurate accounting of all emissions regulated under this part.

(c) *Unit with bypass stack.* Whenever any portion of the flue gases from an affected unit can be routed so as to avoid the installed SO_2 continuous emission monitoring system and flow monitoring system, the owner or operator shall either:

(1) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system or flow monitoring system on the bypass flue, duct, or stack gas stream and calculate SO_2 mass emissions for the unit as the sum of the emissions recorded by all required monitoring systems; or

(2) Monitor SO_2 mass emissions on the bypass flue, duct, or stack gas stream using the reference methods in § 75.22(b) for SO_2 and flow and calculate SO_2 mass emissions for the unit as the sum of the emissions recorded by the installed monitoring systems on the main stack and the emissions measured by the reference method monitoring systems; or

(3) Where a Federal, State, or local regulation or permit prohibits operation of the bypass stack or duct or limits operation of the bypass stack or duct to emergency situations resulting from the malfunction of a flue gas desulfurization system record the following values for each hour during which emissions pass through the bypass stack or duct: the maximum potential concentration for SO_2 as determined under section 2 of appendix A of this part, and the hourly volumetric flow value that would be substituted for the flow monitor installed on the main stack or flue under the missing data procedures in subpart D of this part if data from the flow monitor installed on the main stack or flue were missing for the hour. Calculate SO_2 mass emissions for the unit as the sum of the emissions calculated with the substitute values and the emissions recorded by the SO_2 and flow monitoring systems installed on the main stack.

(d) *Unit with multiple stacks or ducts.* When the flue gases from an affected unit utilize two or more ducts feeding into two or more stacks (that may include flue gases from other affected or nonaffected units), or when the flue gases utilize two or more ducts feeding into a single stack and the owner or operator chooses to monitor in the ducts rather than the stack, the owner or operator shall either:

(1) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in each duct feeding into the stack or stacks and determine SO_2 mass emissions from each affected unit as the sum of the SO_2 mass emissions recorded for each duct; or

(2) Install, certify, operate, and maintain an SO_2 continuous emission monitoring system and flow monitoring system in each stack. Determine SO_2 mass emissions from each affected unit as the sum of the SO_2 mass emissions recorded for each stack, except that where another unit also exhausts flue gases to one or more of the stacks, the owner or operator shall also comply with the applicable common stack requirements of this section to determine and record SO_2 mass emissions from the units using that stack.

(e) *Heat input.* The owner or operator of an affected unit using a common stack, bypass stack, or multiple stacks shall account for heat input according to the following:

(1) The owner or operator of an affected unit using a common stack, bypass stack, or multiple stack with a diluent monitor and a flow monitor on each stack may choose to determine the heat input for the affected unit, wherever flow and diluent monitor measurements are used to determine the heat input, using the procedures specified in paragraphs (a) through (d) of this section, except that the terms ''SO_2 mass emissions'' and ''emissions'' are replaced with the term ''heat input'' and the phrase ''SO_2 continuous emission monitoring system and flow monitoring system'' is replaced with the phrase ''a diluent monitor and a flow monitor''.

(2) Notwithstanding paragraph (e)(1) of this section, for any common stack where any unit utilizing the common stack has a NO_X emission limitation pursuant to Section 407(b) of the Act, the owner or operator shall not combine heat input for compliance purposes and shall determine heat input for that unit separately.

(3) Notwithstanding paragraph (e)(1) of this section, during the period prior to January 1, 2000, the owner or operator shall not combine heat input for units utilizing a common stack in order to determine heat input for each unit for purposes of § 75.10.

(4) In the event that an owner or operator of a unit with a bypass stack does not install and certify a diluent monitor and flow monitoring system in a bypass stack, the owner or operator shall determine total heat input to the unit for each unit operating hour during which the bypass stack is used according to the missing data provisions for heat input under § 75.36 or the procedures for calculating heat input from fuel sampling and analysis in section 5.5 of appendix F of this part.

20. Section 75.17 is amended by revising paragraph (a)(2)(i)(B), adding paragraph (a)(2)(i)(C), removing paragraph (c), redesignating paragraph (d) as paragraph (c), and revising the newly designated paragraph (c) to read as follows:

§ 75.17 Specific provisions for monitoring emissions from common, by-pass, and multiple stacks for NO_X emission rate.

(a) * * *

(2) * * *

(i) * * *

(B) Each unit will comply with the applicable NO_X emission limitation by averaging its emissions with the other unit(s) utilizing the common stack, pursuant to the emissions averaging plan submitted under part 76 of this chapter; or

(C) Each unit's compliance with the applicable NO_X emission limit will be determined by a method satisfactory to the Administrator for apportioning to each of the units the combined NO_X emission rate (in lb/mmBtu) measured in the common stack, as provided in a petition submitted by the designated representative. The Administrator may approve such demonstrated substitute methods for apportioning NO_X emission rate measured in a common stack whenever the demonstration ensures complete and accurate estimation of all emissions regulated under this part.

* * * * *

(c) *Unit with multiple stacks or bypass stack.* When the flue gases from an affected unit utilize two or more ducts feeding into two or more stacks (that may include flue gases from other affected or nonaffected units), or when flue gases utilize two or more ducts feeding into a single stack and the owner or operator chooses to monitor in the ducts rather than the stack, the owner or operator shall monitor the NO_X emission rate representative of each affected unit. Where another unit also exhausts flue gases to one or more of the stacks where monitoring systems are installed, the owner or operator shall also comply with the applicable common stack monitoring requirements of this section. The owner or operator shall either:

(1) Install, certify, operate, and maintain a NO_X continuous emission monitoring system in each stack or duct and determine the NO_X emission rate for the unit as the Btu-weighted sum of the NO_X emission rates measured in the stacks or ducts using the heat input estimation procedures in appendix F of this part; or

(2) Install, certify, operate, and maintain a NO_X continuous emission monitoring system in one stack or duct

from each affected unit and record the monitored value as the NO_X emission rate for the unit. The owner or operator shall account for NO_X emissions from the unit during all times when the unit combusts fuel.

21. Section 75.18 is amended by revising paragraph (b) to read as follows:

§ 75.18 Specific provisions for monitoring emissions from common and by-pass stacks for opacity.

(a) * * *

(b) *Unit using bypass stack.* Where any portion of the flue gases from an affected unit can be routed so as to bypass the installed continuous opacity monitoring system, the owner or operator shall install, certify, operate, and maintain a certified continuous opacity monitoring system on each bypass stack flue, duct, or stack gas stream unless either:

(1) An applicable Federal, State, or local opacity regulation or permit exempts the unit from a requirement to install a continuous opacity monitoring system in the bypass stack; or

(2) A continuous opacity monitoring system is already installed and certified at the inlet of the add-on emissions controls; or

(3) The owner or operator monitors opacity using Method 9 of appendix A, part 60 of this chapter whenever emissions pass through the bypass stack.

Subpart C—Operation and Maintenance Requirements

22. Section 75.20 is amended by revising paragraphs (a) introductory text, (a)(1), (a)(2), (a)(3), (a)(4) introductory text, (a)(4)(iii), (a)(4)(iv), (a)(5), (b), the last sentence of paragraph (c) introductory text, (c)(1)(v), (c)(2)(ii), (c)(2)(iii), (c)(4), (c)(5) introductory text, (c)(5)(iv), (c)(6)(i), (c)(8), (d), (f) introductory text, (f)(1), the last sentence of paragraph (f)(2), (f)(3) and (g), by adding a new sentence at the end of paragraph (f)(2), and by removing paragraph (c)(9) to read as follows:

§ 75.20 Certification and recertification procedures.

(a) *Initial certification approval process.* The owner or operator shall ensure that each continuous emission or opacity monitoring system required by this part, which includes the automated data acquisition and handling system, and, where applicable, the CO_2 continuous emission monitoring system, meets the initial certification requirements of this section and shall ensure that all applicable certification tests under paragraph (c) of this section are completed by the deadlines specified in § 75.4 and prior to use in the Acid Rain Program. In addition, whenever the owner or operator installs a continuous emission or opacity monitoring system in order to meet the requirements of §§ 75.13 through 75.18 where no continuous emission or opacity monitoring system was previously installed, initial certification is required.

(1) *Notification of initial certification test dates.* The owner or operator or designated representative shall submit a written notice of the dates of initial certification testing at the unit as specified in § 75.60 and § 75.61(a)(1)(i).

(2) *Certification application.* The owner or operator shall apply for certification of each continuous emission or opacity monitoring system used under the Acid Rain Program. The owner or operator shall submit the certification application in accordance with § 75.60 and each complete certification application shall include the information specified in § 75.63.

(3) *Provisional approval of certification applications.* Upon the successful completion of the required certification procedures of this section for each continuous emission or opacity monitoring system or component thereof, each continuous emission or opacity monitoring system or component thereof shall be deemed provisionally certified for use under the Acid Rain Program for a period not to exceed 120 days following receipt by the Administrator of the complete certification application under paragraph (a)(4) of this section; provided that no continuous emission or opacity monitor systems for a combustion source seeking to enter the Opt-in Program in accordance with part 74 of this chapter shall be deemed provisionally certified for use under the Acid Rain Program. Data measured and recorded by a provisionally certified continuous emission or opacity monitoring system or component thereof, in accordance with the requirements of appendix B of this part, will be considered valid quality-assured data (retroactive to the date and time of successful completion of all certification tests), provided that the Administrator does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of receipt of the complete certification application.

(4) *Certification application formal approval process.* The Administrator will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application. In the event the Administrator does not issue such a written notice within 120 days of receipt, each continuous emission or opacity monitoring system which meets the performance requirements of this part and is included in the certification application will be deemed certified for use under the Acid Rain Program.

* * * * *

(iii) *Disapproval notice.* If the certification application is complete but shows that any continuous emission or opacity monitoring system or component thereof does not meet the performance requirements of this part, the Administrator shall issue a written notice of disapproval of the certification application within 120 days of receipt. By issuing the notice of disapproval, the provisional certification is invalidated by the Administrator, and the data measured and recorded by each uncertified continuous emission or opacity monitoring system or component thereof shall not be considered valid quality-assured data from the date and time of completion of the invalid certification tests until the date and time that the owner or operator completes subsequently approved initial certification tests. The owner or operator shall follow the procedures for loss of certification in paragraph (a)(5) of this section for each continuous emission or opacity monitoring system or component thereof which was disapproved.

(iv) *Audit decertification.* The Administrator may issue a notice of disapproval of the certification status of a continuous emission or opacity monitoring system or component thereof, in accordance with § 75.21.

(5) *Procedures for loss of certification.* When the Administrator issues a notice of disapproval of a certification application or a notice of disapproval of certification status (as specified in paragraph (a)(4) of this section), then:

(i) The owner or operator shall substitute the following values, as applicable, for each hour of unit operation during the period of invalid data specified in paragraph (a)(4)(iii) of this section or in § 75.21: the maximum potential concentration of SO_2 as defined in section 2.1 of appendix A of this part to report SO_2 concentration; the maximum potential NO_X emission rate, as defined in § 72.2 of this chapter to report NO_X emissions, the maximum potential flow rate, as defined in section 2.1 of appendix A of this part to report volumetric flow, or the maximum CO_2 concentration used to determine the maximum potential concentration of SO_2 in section 2.1.1.1 of appendix A of this part to report CO_2 concentration data until such time, date, and hour as the continuous emission monitoring system or component thereof can be adjusted, repaired, or replaced and certification tests successfully completed; and

(ii) The designated representative shall submit a notification of certification retest dates as specified in § 75.61(a)(1)(ii) and a new certification application according to the procedures in paragraph (a)(2) of this section; and

(iii) The owner or operator shall repeat all certification tests or other requirements that were failed by the continuous emission or opacity monitoring system, as indicated in the Administrator's notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(b) *Recertification approval process.* Whenever the owner or operator makes a replacement, modification, or change in the certified continuous emission monitoring system or continuous opacity monitoring system (which includes the automated data acquisition and handling system, and, where applicable, the CO_2 continuous emission monitoring system), that significantly affects the ability of the system to measure or record the SO_2 concentration, volumetric gas flow, SO_2 mass emissions, NO_X emission rate, CO_2 concentration, or opacity, or to meet the requirements of § 75.21 or appendix B of this part, the owner or operator shall recertify the continuous emission monitoring system, continuous opacity monitoring system, or component thereof according to the procedures in this paragraph. Examples of changes which require recertification include: replacement of the analytical method, including the analyzer; change in location or orientation of the sampling probe or site; rebuilding of the analyzer or all monitoring system equipment; and replacement of an existing continuous emission monitoring system or continuous opacity monitoring system. In addition, if a continuous emission monitoring system is not operating for more than two calendar years, then the owner or operator shall recertify the continuous emission monitoring system. The Administrator may determine whether a replacement, modification or change in a monitoring system significantly affects the ability of the monitoring system to measure or record the SO_2 concentration, volumetric gas flow, SO_2 mass emissions, NO_X emission rate, CO_2 concentration, or opacity. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit operation that significantly changes the flow or concentration profile or opacity of monitored emissions, the owner or operator shall recertify the continuous emission or opacity monitoring system or component thereof according to the procedures in this paragraph. Recertification is not required prior to use of a non-redundant backup continuous emission monitoring system in cases where all of the following conditions have been met: the non-redundant backup continuous emission monitoring system has previously been certified at the same sampling location; all components of the non-redundant backup continuous emission monitoring system have previously been certified; and component monitors of the non-redundant backup continuous emission monitoring system pass a linearity check (for pollutant concentration monitors) or a calibration error test (for flow monitors) prior to their use for monitoring of emissions or flow. In addition, changes resulting from routine or normal corrective maintenance and/or quality assurance activities do not require recertification, nor do software modifications in the automated data acquisition and handling system, where the modification is only for the purpose of generating additional or modified reports for the State Implementation Plan or for reporting requirements under subpart G of this part.

(1) *Tests required.* For recertification testing, the owner or operator shall complete all certification tests in paragraph (c) of this section applicable to the monitoring system, except as approved by the Administrator. Such approval may be obtained by petition under § 75.66 or may be provided in written guidance from the Administrator.

(2) *Notification of recertification test dates.* The owner or operator or designated representative shall submit notice of testing dates for recertification under this paragraph as specified in § 75.61(a)(1)(ii), unless such testing is required as a result of a change in the flue gas handling system, a change in location or orientation of the sampling probe or site, or the planned replacement of a continuous emission or opacity monitoring system or component thereof. In such cases, the owner or operator shall provide notice in accordance with the notice provisions for initial certification testing in § 75.61(a)(1)(i).

(3) *Substitution of missing data.* (i) The owner or operator shall substitute for missing data during the period following the replacement, modification, or change to the monitoring system up to the time of successful completion of all recertification testing according to the standard missing data procedures in §§ 75.33 through 75.36, and shall use the standard missing data substitution procedures for all missing data periods following the recertification, except as provided below.

(ii) If the replacement, modification, or change is such that the data collected by the prior certified monitoring system are no longer representative, such as after a change to the flue gas handling system or unit operation that requires changing the span value to be consistent with Section 2.1 of appendix A of this part, the owner or operator must also substitute the appropriate one of the following values: for a change that results in a significantly higher concentration or flow rate, substitute maximum potential values according to the procedures in paragraph (a)(5) of this section during the period following the replacement, modification, or change up to the time of the successful completion of all recertification testing; or for a change that results in a significantly lower concentration or flow rate, substitute data using the standard missing data procedures during the period following the replacement, modification, or change up to the time of the successful completion of all recertification testing. The owner or operator shall then use the initial missing data procedures in § 75.31 following provisional certification, unless otherwise provided by § 75.34 for units with add-on emission controls.

(4) *Recertification application.* The designated representative shall apply for recertification of a continuous emission or opacity monitoring system used under the Acid Rain Program according to the procedures in paragraph (a)(2) of this section. Each complete recertification application shall include the information specified in § 75.63 of this part.

(5) *Approval/disapproval of request for recertification.* The procedures for provisional certification in paragraph (a)(3) of this section shall apply. The Administrator will issue a written notice of approval or disapproval according to the procedures in paragraph (a)(4) of this section, except that the period for the Administrator's review provided under paragraph (a)(4) of this section shall not exceed 60 days following receipt of the complete recertification application by the Administrator. The missing data substitution procedures under paragraph (b)(3) of this section shall

apply in the event of a loss of recertification.

(c) * * * Except as specified in paragraphs (b)(1), (d) and (e) of this section, the owner or operator shall perform the following tests for initial certification or recertification of continuous emission or opacity monitoring systems or components according to the requirements of appendix A of this part:

(1) * * *

(v) A cycle time test.

(2) * * *

(ii) Relative accuracy test audits at three flue gas velocities; and

(iii) A bias test (at normal operating load).

(3) * * *

(4) The certification test data from an O_2 or a CO_2 diluent gas monitor certified for use in a NO_X continuous emission monitoring system may be submitted to meet the requirements of § 75.20(c)(5).

(5) For each CO_2 pollutant concentration monitor or O_2 monitor which is part of a CO_2 continuous emission monitoring system or is used to monitor heat input and for each SO_2-diluent continuous emission monitoring system:

* * * * *

(iv) A cycle-time test.

(6) * * *

(i) Performance of the tests for certification or recertification, according to the requirements of Performance Specification 1 in appendix B to part 60 of this chapter.

* * * * *

(8) The owner or operator shall provide, or cause to be provided, adequate facilities for certification or recertification testing that include:

(i) Sampling ports adequate for test methods applicable to such facility, such that:

(A) Volumetric flow rate, pollutant concentration, and pollutant emission rates can be accurately determined by applicable test methods and procedures; and

(B) A stack or duct free of cyclonic flow during performance tests is available, as demonstrated by applicable test methods and procedures.

(ii) Basic facilities (e.g., electricity) for sampling and testing equipment.

(d) *Certification/recertification procedures for optional backup continuous emission monitoring systems*—(1) *Redundant backups.* The owner or operator of an optional redundant backup continuous emission monitoring system shall comply with all the requirements for initial certification and recertification according to the procedures specified in paragraphs (a), (b), and (c) of this section. The owner or operator shall operate the redundant backup continuous emission monitoring system during all periods of unit operation, except for periods of calibration, quality assurance, maintenance, or repair. The owner or operator shall perform upon the redundant backup continuous emission monitoring system all quality assurance and quality control procedures specified in appendix B of this part.

(2) *Non-redundant backups.* The owner or operator of an optional non-redundant backup continuous emission monitoring system shall comply with all the requirements for initial certification and recertification according to the procedures specified in paragraphs (a), (b) and (c) of this section for each non-redundant backup continuous emission monitoring system, except that: the owner or operator of a non-redundant backup continuous emission monitoring system may omit the 7-day calibration error test for certification or recertification of an SO_2 pollutant concentration monitor, flow monitor, NO_X pollutant concentration monitor, or diluent gas monitor, provided the non-redundant backup system is not used for reporting on any affected unit for more than 720 hours in any calendar year. In addition, the owner or operator shall ensure that the certified non-redundant backup continuous emission monitoring system passes a linearity check (for pollutant concentration monitors) or a calibration error test (for flow monitors) prior to each use for recording and reporting emissions and complies with the daily and quarterly quality assurance and quality control requirements in appendix B of this part for each day and quarter that the non-redundant backup monitoring system is used to report data. If the owner or operator does not perform semi-annual or annual relative accuracy test audits upon the non-redundant backup continuous emission monitoring system, then the owner or operator shall recertify the non-redundant continuous emission monitoring system once every two calendar years, performing all certification tests applicable under this paragraph. However, if a non-redundant backup system is used for reporting data from any affected unit or common stack for more than 720 hours in any one calendar year, then reported data after the first 720 hours is not valid, quality-assured data unless the owner or operator has ensured that the non-redundant backup monitoring system has also passed the 7-day calibration error test, before data is recorded for any period in excess of 720 hours for that calendar year for that monitoring system.

(3) *Reference method backups.* A monitoring system that is operated as a reference method backup system pursuant to the reference method requirements of Methods 2, 6C, 7E, or 3A in appendix A of part 60 of this chapter need not perform and pass the certification tests required by paragraph (c) of this section prior to its use pursuant to this paragraph.

* * * * *

(f) *Certification/recertification procedures for alternative monitoring systems.* The designated representative representing the owner or operator of each alternative monitoring system approved by the Administrator as equivalent to or better than a continuous emission monitoring system according to the criteria and procedures in subpart E of this part shall apply for certification to the Administrator prior to use of the system under the Acid Rain Program, and shall apply for recertification to the Administrator following a replacement, modification, or change by performing all of the tests under paragraph (c) of this section that can be applied to the alternative monitoring system. The owner or operator of an alternative monitoring system shall comply with the notification and application requirements for certification or recertification according to the procedures specified in paragraphs (f)(1), (f)(2), and (f)(3) of this section.

(1) Each alternative monitoring system shall be certified by the Administrator before it may be authorized for use under the Acid Rain Program.

(i) *Certification testing notification.* The designated representative shall provide certification testing notification according to the procedures in subparagraph (a)(1) of this section prior to conducting certification testing.

(ii) *Monitoring plan.* The designated representative shall submit an initial monitoring plan at least 45 days prior to the first day of certification testing.

(iii) *Certification application.* The designated representative shall submit a certification application for the alternative monitoring system prior to use in the Acid Rain Program. Each complete certification application shall include:

(A) Information and test results for the relative accuracy test and any other applicable tests in paragraph (c) of this section;

(B) A revised monitoring plan; and

(C) Results of the tests for verification of the accuracy of emissions calculations and missing data procedures performed by the automated data acquisition and handling system.

(2) * * * The procedures for provisional certification under paragraph (a)(3) of this section and for a 120-day EPA review period for initial certification under paragraph (a)(4) of this section shall apply to alternative monitoring systems, provided that the Administrator has already approved the petition or petitions required under subpart E of this part. The designated representative shall report no data from an alternative monitoring system in a quarterly report from a period prior to both Administrator approval of the petition or petitions under subpart E of this part and also successful completion of certification testing.

(3) The recertification requirements of paragraph (b) of this section shall apply to alternative monitoring systems, except that the owner or operator shall perform the tests specified under paragraph (f)(1)(iii) of this section.

(g) *Certification procedures for excepted monitoring systems under appendices D and E.* The owner or operator of a gas-fired unit, oil-fired unit, or diesel-fired unit using the optional protocol under appendix D or E of this part shall ensure that an excepted monitoring system under appendix D or E of this part meets the applicable general operating requirements of § 75.10, the applicable requirements of appendices D and E to this part, and the certification requirements of this paragraph.

(1) *Certification testing.* The owner or operator shall use the following procedures for certification of an excepted monitoring system under appendix D or E of this part.

(i) When the optional SO_2 mass emissions estimation procedure in appendix D of this part or the optional NO_X emissions estimation protocol in appendix E of this part is used, the owner or operator shall provide data from a calibration test for each fuel flowmeter according to the appropriate calibration procedures using one of the following standard methods: ASME MFC–3M–1989 with September 1990 Errata, ''Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi'', ASME MFC–4M–1986 (Reaffirmed 1990) ''Measurement of Gas Flow by Turbine Meters'', ASME MFC–5M–1985 ''Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters'', ASME MFC–6M–1987 with June 1987 Errata, ''Measurement of Fluid Flow in Pipes Using Vortex Flow Meters'', ASME MFC–7M–1987 (Reaffirmed 1992), ''Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles'', ASME MFC–9M–1988 with December 1989 Errata, ''Measurement of Liquid Flow in Closed Conduits by Weighing Method'', ISO 8316: 1987(E) ''Measurement of Liquid Flow in Closed Conduits—Method by Collection of the Liquid in a Volumetric Tank'', or American Gas Association Report No. 3: Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids Part 1: General Equations and Uncertainty Guidelines (October 1990 Edition), Part 2: Specification and Installation Requirements (February 1991 Edition) and Part 3: Natural Gas Applications (August 1992 Edition), excluding the modified calculation procedures of Part 3, as required by appendices D and E of this part (all methods incorporated by reference under § 75.6). The Administrator may also approve other procedures that use equipment traceable to National Institute of Standards of Technology (NIST) standards. The designated representative shall document the procedure and the equipment used in the monitoring plan for the unit and in a petition submitted in accordance with § 75.66(c).

(ii) For the automated data acquisition and handling system used under either the optional SO_2 mass emissions estimation procedure in appendix D of this part or the optional NO_X emissions estimation protocol in appendix E of this part, the owner or operator shall perform tests designed to verify:

(A) The proper computation of hourly averages for pollutant concentrations, fuel flow rates, emission rates, heat input, and pollutant mass emissions; and

(B) Proper computation and application of the missing data substitution procedures in appendix D or E of this part.

(iii) When the optional NO_X emissions protocol in appendix E is used, the owner or operator shall complete all initial performance testing under section 2.1 of appendix E.

(2) *Certification testing notification.* The designated representative shall provide initial certification testing notification and periodic retesting notification for an excepted monitoring system under appendix E of this part as specified in § 75.61. The designated representative shall submit recertification testing notification as specified in § 75.61 for quality assurance/quality control-related NO_X emission rate testing under section 2.3 of appendix E of this part for an excepted monitoring system under appendix E of this part. Certification testing notification or periodic retesting notification is not required for testing of a fuel flowmeter or testing for an excepted monitoring system under appendix D of this part.

(3) *Monitoring plan.* The designated representative shall submit an initial monitoring plan in accordance with § 75.62(a).

(4) *Certification application.* The designated representative shall submit a certification application in accordance with §§ 75.60 and 75.63.

(5) *Provisional approval of certification applications.* Upon the successful completion of the required certification procedures for each excepted monitoring system under appendix D or E of this part, each excepted monitoring system under appendix D or E of this part shall be deemed provisionally certified for use under the Acid Rain Program during the period for the Administrator's review. The provisions for the certification application formal approval process in paragraph (a)(4) of this section shall apply. Data measured and recorded by a provisionally certified excepted monitoring system under appendix D or E of this part, will be considered quality-assured data from the date and time of completion of the final certification test, provided that the Administrator does not revoke the provisional certification by issuing a notice of disapproval within 120 days of receipt of the complete certification application in accordance with the provisions in paragraph (a)(4) of this section.

23. Section 75.21 is amended by adding paragraphs (d) and (e) to read as follows:

§ 75.21 Quality assurance and quality control requirements.

* * * * *

(d) *Notification for periodic relative accuracy test audits.* The owner or operator or the designated representative shall submit a written notice of the dates of relative accuracy testing as specified in § 75.61.

(e) *Consequences of audits.* The owner or operator shall invalidate data from a continuous emission monitoring system or continuous opacity monitoring system upon failure of an audit under paragraph (a)(1)(iv) of § 75.20, under appendix B of this part, or any other audit, beginning with the unit operating hour of completion of a failed audit as determined by the Administrator. The owner or operator shall not use invalidated data for reporting emissions or heat input, nor for calculations of monitor data availability.

(1) *Audit decertification.* Whenever both: an audit (including audits required under appendix B of this part)

of a continuous emission or opacity monitoring system or component thereof, including the data acquisition and handling system, and a review of the initial certification application or recertification application, reveal that any continuous emission or opacity monitoring system or component should not have been certified because it did not meet a particular performance specification or other requirement of this part both at the time of the certification application submission and at the time of the audit, the Administrator will issue a notice of disapproval of the certification status of such system or component. By issuing the notice of disapproval, the certification status is revoked, prospectively, by the Administrator. The data measured and recorded by each continuous emission or opacity monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved certification tests. The owner or operator shall follow the procedures for loss of certification in § 75.20(a)(5) for initial certification or § 75.20(b)(3) for recertification to replace, prospectively, all of the invalid, non-quality-assured data for each disapproved continuous emission or opacity monitoring system.

(2) *Out-of-control period.* Whenever a continuous emission monitoring system or continuous opacity monitoring system fails a periodic quality assurance audit, an audit under § 75.20(a)(1)(iv), a field audit from EPA personnel or other audit, the system is out-of-control. The owner or operator shall follow the procedures for out-of-control periods in § 75.24.

24. Section 75.22 is amended by revising paragraphs (a) introductory text, (a)(5), and (a)(6) and by adding paragraphs (b) and (c) to read as follows:

§ 75.22 Reference test methods.

(a) The owner or operator shall use the following methods included in appendix A to part 60 of this chapter to conduct monitoring system tests for certification or recertification of continuous emission monitoring systems and excepted monitoring systems under appendix E of this part and quality assurance and quality control procedures.

* * * * *

(5) Methods 6, 6A, 6B or 6C, and 7, 7A, 7C, 7D or 7E, as applicable, are the reference methods for determining SO_2 and NO_X pollutant concentrations. (Methods 6A and 6B may also be used to determine SO_2 emission rate in lb/mmBtu. Methods 7, 7A, 7C, 7D, or 7E must be used to measure total NO_X emissions, both NO and NO_2, for purposes of this part. The owner or operator shall not use the exception in section 5.1.2 of Method 7E.)

(6) Method 20 is the reference method for determining NO_X and diluent emissions from stationary gas turbines for testing under appendix E of this part.

(b) The owner or operator may use the following methods in Appendix A of part 60 of this chapter as a reference method backup monitoring system to provide quality-assured monitor data:

(1) Method 3A for determining O_2 or CO_2 concentration;

(2) Method 6C for determining SO_2 concentration;

(3) Method 7E for determining total NO_X concentration (both NO and NO_2); and

(4) Method 2 for determining volumetric flow. The sample point(s) for reference methods shall be located according to the provisions of section 6.5.5 of appendix A of this part.

(c) (1) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures of this part unless the Administrator:

(i) Specifies or approves, in specific cases, the use of a reference method with minor changes in methodology;

(ii) Approves the use of an equivalent method; or

(iii) Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors.

(2) Nothing in this paragraph shall be construed to abrogate the Administrator's authority to require testing under Section 114 of the Act.

25. Section 75.23 is revised to read as follows:

§ 75.23 Alternatives to standards incorporated by reference.

(a) The designated representative of a unit may petition the Administrator for an alternative to any standard incorporated by reference and prescribed in this part in accordance with § 75.66(c).

(b) (reserved)

26. Section 75.24 is amended by revising paragraphs (d) and (e) introductory text to read as follows:

§ 75.24 Out-of-control periods.

* * * * *

(d) When the bias test indicates that an SO_2 monitor, volumetric flow monitor, or NO_X continuous emission monitoring system is biased low (i.e., the arithmetic mean of the differences between the reference method value and the monitor or monitoring system measurements in a relative accuracy test audit exceed the bias statistic in section 7 of appendix A to this part), the owner or operator shall adjust the monitor or continuous emission monitoring system to eliminate the cause of bias such that it passes the bias test or calculate and use the bias adjustment factor as specified in section 2.3.3 of appendix B to this part and in accordance with § 75.7.

(e) The owner or operator shall determine if a continuous opacity monitoring system is out-of-control and shall take appropriate corrective actions according to the procedures specified for State Implementation Plans, pursuant to appendix M of part 51 of this chapter. The owner or operator shall comply with the monitor data availability requirements of the State. If the State has no monitor data availability requirements for continuous opacity monitoring systems, then the owner or operator shall comply with the monitor data availability requirements as stated in the data capture provisions of appendix M, part 51 of this chapter.

Subpart D—Missing Data Substitution Procedures

27. Section 75.30 is revised to read as follows:

§ 75.30 General provisions.

(a) Except as provided in § 75.34, the owner or operator shall provide substitute data for each affected unit using a continuous emission monitoring system according to the missing data procedures in this subpart whenever the unit combusts any fuel and:

(1) A valid, quality-assured hour of SO_2 concentration data (in ppm) has not been measured and recorded for an affected unit by a certified SO_2 pollutant concentration monitor, or by an approved alternative monitoring method under subpart E of this part, except as provided in paragraph (d) of this section; or

(2) A valid, quality-assured hour of flow data (in scfh) has not been measured and recorded for an affected unit from a certified flow monitor, or by an approved alternative monitoring system under subpart E of this part; or

(3) A valid, quality-assured hour of NO_X emission rate data (in lb/mmBtu) has not been measured and recorded for an affected unit by a certified NO_X continuous emission monitoring system, or by an approved alternative monitoring system under subpart E of this part; or

(4) A valid, quality-assured hour of CO_2 concentration data (in percent CO_2,

or percent O_2 converted to percent CO_2 using the procedures in appendix F of this part) has not been measured and recorded for an affected unit by a certified CO_2 continuous emission monitoring system, or by an approved alternative monitoring method under subpart E of this part.

(b) However, the owner or operator shall have no need to provide substitute data according to the missing data procedures in this subpart if the owner or operator uses SO_2 or CO_2 (or O_2) concentration, flow, or NO_X emission rate data recorded from either a certified redundant or non-redundant backup continuous emission monitor or a backup reference method monitoring system when the certified primary monitor is not operating or out-of-control. A redundant or non-redundant backup continuous emission monitoring system must have been certified according to the procedures in § 75.20 prior to the missing data period. Non-redundant backup continuous emission monitoring system must pass a linearity check (for pollutant concentration monitors) or a calibration error test (for flow monitors) prior to each period of use of the certified backup monitor for recording and reporting emissions. Use of a certified backup monitoring system or backup reference method monitoring system is optional and at the discretion of the owner or operator.

(c) When the certified primary monitor is not operating or out-of-control, then data recorded for an affected unit from a certified backup continuous emission monitor or backup reference method monitoring system are used, as if such data were from the certified primary monitor, to calculate monitor data availability in § 75.32, and to provide the quality-assured data used in the missing data procedures in §§ 75.31 and 75.33, such as the ''hour after'' value.

(d) [Reserved]

(e) [Reserved]

28. Section 75.31 is amended by revising paragraphs (a), (b) and (c)(3) to read as follows:

§ 75.31 Initial missing data procedures.

(a) During the first 720 quality-assured monitor operating hours following initial certification (i.e., following the date and time of completion of successful certification tests), of the SO_2 and CO_2 (or O_2) pollutant concentration monitor and during the first 2,160 quality-assured monitor operating hours following initial certification of the flow monitor and NO_X continuous emission monitoring system(s), the owner or operator shall provide substitute data required under this subpart according to the procedures in paragraphs (b) and (c) of this section. The owner or operator of a unit shall use these procedures for no longer than three years (26,280 clock hours) following initial certification.

(b) *SO_2 or CO_2 (or O_2) concentration data.* For each hour of missing SO_2 or CO_2 concentration data (including CO_2 data converted from O_2 data using the procedures in appendix F of this part) or O_2 concentration data used to calculate heat input, the owner or operator shall calculate the substitute data as follows:

(1) Whenever prior quality-assured data exist, the owner or operator shall substitute, by means of the data acquisition and handling system, the average of the hourly SO_2 or CO_2 (or O_2) concentrations recorded for an affected unit by a certified monitor for the unit operating hour immediately before and the unit operating hour immediately after the missing data period for each hour of missing data.

(2) Whenever no prior quality-assured SO_2 or CO_2 (or O_2) concentration data exist, the owner or operator shall substitute the maximum potential concentration for SO_2 or CO_2 (or minimum O_2 concentration, for determination of heat input), as specified in section 2.1 of appendix A of this part, for each hour of missing data.

(c) * * *

(3) Whenever no prior quality-assured flow or NO_X emission rate data exist for the corresponding load range, or any higher load range, the owner or operator shall calculate and substitute the maximum potential flow rate or shall substitute the maximum potential NO_X emission rate, as specified in § 72.2 of this chapter and section 2.1 of appendix A, for each hour of missing data.

29. Section 75.32 is amended by revising paragraphs (a) introductory text, the first sentence of paragraphs (a)(1) and (a)(2) and paragraph (b) to read as follows:

§ 75.32 Determination of monitor data availability for standard missing data procedures.

(a) Following initial certification, upon completion of the first 720 quality-assured monitor operating hours of the SO_2 or CO_2 (or O_2) pollutant concentration monitor or the first 2,160 quality-assured monitor operating hours of the flow monitor or NO_X continuous emission monitoring system, the owner or operator shall calculate and record, by means of the automated data acquisition and handling system, the percent monitor data availability for the SO_2 and CO_2 (or O_2) pollutant concentration monitor, the flow monitor, the NO_X continuous emission monitoring system as follows:

(1) Prior to completion of 8,760 unit operating hours following initial certification, the owner or operator shall, for the purpose of applying the standard missing data procedures of § 75.33, use Equation 8 to calculate, hourly, percent monitor data availability. * * *

(2) Upon completion of 8,760 unit operating hours following initial certification (or, for a unit with less than 8,760 unit operating hours three years (26,280 clock hours) after initial certification, upon completion of three years (26,280 clock hours) following initial certification) and thereafter, the owner or operator shall, for the purpose of applying the standard missing data procedures of § 75.33, use Equation 9 to calculate, hourly, percent monitor data availability. * * *

(3) * * *

(b) The monitor data availability need not be calculated during the missing data period. The owner or operator shall record the percent monitor data availability for the last hour of each missing data period as the monitor availability used to implement the missing data substitution procedures.

30. Section 75.33 is amended by adding a sentence to the end of paragraph (a) and by adding paragraph (c)(5) to read as follows:

§ 75.33 Standard missing data procedures.

(a) * * * The owner or operator of a unit shall substitute for missing data using only quality-assured monitor operating hours of data from the three years (26,280 clock hours) prior to the date and time of the missing data period. * * *

* * * * *

(c) * * *

(5) Whenever no proper quality-assured flow or NO_X emission rate data exist for either the corresponding load range or a higher load range, the owner or operator shall substitute the maximum potential NO_X emission rate or the maximum potential flow rate, as defined in section 2.1 of appendix A of this part.

* * * * *

31. Section 75.35 is added as follows:

§ 75.35 Missing data procedures for CO_2 data.

(a) On or after January 1, 1996, the owner or operator of a unit with a CO_2 continuous emission monitoring system shall substitute for missing CO_2 concentration data using the procedures of this section. Prior to January 1, 1996, the owner or operator of a unit with a

CO_2 continuous emission monitoring system may substitute for missing CO_2 concentration data using the procedures of this section.

(b) During the first 720 quality-assured monitor operating hours following initial certification (i.e., following the date and time of completion of successful certification tests), of the CO_2 continuous emission monitoring system, the owner or operator shall provide substitute data required under this subpart according to the procedures in paragraph (b) of § 75.31.

(c) Upon completion of the first 720 quality-assured monitor operating hours following initial certification of the CO_2 continuous emission monitoring system, the owner or operator shall provide substitute data for CO_2 concentration or CO_2 mass emissions required under this subpart according to the procedures in paragraphs (c)(1), (c)(2), or (c)(3) of this section, including CO_2 data calculated from O_2 measurements using the procedures in appendix F of this part.

(1) Whenever a quality-assured monitoring operating hour of CO_2 concentration data has not been obtained and recorded for a period less than or equal to 72 hours or for a missing data period where the percent monitor data availability for the CO_2 continuous emission monitoring system as of the last unit operating hour of the previous calendar quarter was greater than or equal to 90.0 percent, then the owner or operator shall substitute the average of the recorded CO_2 concentration for the hour before and the hour after the missing data period for each hour in each missing data period.

(2) Whenever no quality-assured CO_2 concentration data are available for a period of 72 consecutive unit operating hours or more, the owner or operator shall begin substituting CO_2 mass emissions calculated using the procedures in appendix G of this part beginning with the seventy-third hour of the missing data period until quality-assured CO_2 concentration data are again available. The owner or operator shall use the CO_2 concentration from the hour before the missing data period to substitute for hours 1 through 72 of the missing data period.

(3) Whenever no quality-assured CO_2 concentration data are available for a period where the percent monitor data availability for the CO_2 continuous emission monitoring system as of the last unit operating hour of the previous calendar quarter was less than 90.0 percent, the owner or operator shall substitute CO_2 mass emissions calculated using the procedures in appendix G of this part for each hour of the missing data period until quality-assured CO_2 concentration data are again available.

32. Section 75.36 is added as follows:

§ 75.36 Missing data procedures for heat input.

(a) On or after January 1, 1996, the owner or operator of a unit monitoring heat input with a CO_2 or O_2 pollutant concentration monitor and a flow monitoring system shall substitute for missing heat input data using the procedures of this section. Prior to January 1, 1996, the owner or operator of a unit monitoring heat input with a CO_2 or O_2 pollutant concentration monitor and a flow monitoring system may substitute for missing heat input data using the procedures of this section.

(b) During the first 720 quality-assured monitor operating hours following initial certification (i.e., following the date and time of completion of successful certification tests), of the CO_2 or O_2 pollutant concentration monitor and during the first 2,160 quality-assured monitoring operating hours following initial certification of the flow monitor, the owner or operator shall provide substitute data for heat input calculated under section 5.2 of appendix F of this part by substituting the CO_2 or O_2 concentration measured or substituted according to paragraph (b) of § 75.31, and by substituting the flow rate measured or substituted according to § 75.31.

(c) Upon completion of the first 720 quality-assured monitor operating hours following initial certification of the CO_2 (or O2) pollutant concentration monitor, the owner or operator shall provide substitute data for CO_2 or O_2 concentration to calculate heat input or shall substitute heat input determined under appendix F of this part according to the procedures in paragraphs (c)(1), (c)(2), or (c)(3) of this section. Upon completion of 2,160 quality-assured monitor operating hours following initial certification of the flow monitor, the owner or operator shall provide substitute data for volumetric flow according to the procedures in § 75.33 in order to calculate heat input, unless required to determine heat input using the fuel sampling procedures in appendix F of this part under paragraphs (c)(1), (c)(2) or (c)(3) of this section.

(1) Whenever a quality-assured monitor operating hour of CO_2 or O_2 concentration data has not been obtained and recorded for a period less than or equal to 72 hours or for a missing data period where the percent monitor data availability for the CO_2 or O_2 pollutant concentration monitor as of the last unit operating hour of the previous calendar quarter was greater than or equal to 90.0 percent, the owner or operator shall substitute the average of the recorded CO_2 or O_2 concentration for the hour before and the hour after the missing data period for each hour in each missing data period to calculate heat input.

(2) Whenever a quality-assured monitor operating hour of CO_2 or O_2 concentration data has not been obtained and recorded for a period of 72 consecutive unit operating hours or more, the owner or operator shall begin substituting heat input calculated using the procedures in section 5.5 of appendix F of this part beginning with the seventy-third hour of the missing data period until quality-assured CO_2 or O_2 concentration data are again available. The owner or operator shall use the CO_2 or O_2 concentration from the hour before the missing data period to substitute for hours 1 through 72 of the missing data period.

(3) Whenever no quality-assured CO_2 or O_2 concentration data are available for a period where the percent monitor data availability for the CO_2 continuous emission monitoring system (or O_2 diluent monitor) as of the last unit operating hour of the previous calendar quarter was less than 90.0 percent, the owner or operator shall substitute heat input calculated using the procedures in section 5.5 of appendix F of this part for each hour of the missing data period until quality-assured CO_2 or O_2 concentration data are again available.

(d) For a unit that has no diluent monitor certified during the period between the certification deadline in § 75.4(a) for flow monitoring systems and the certification deadline in § 75.4(a) for NO_X and CO_2 continuous emission monitoring systems, the owner or operator shall calculate heat input using the procedures in section 5.5 of appendix F of this part until quality-assured data are available from both a flow monitor and a diluent monitor.

Subpart E—Alternative Monitoring Systems

33. Section 75.41 is amended by adding a sentence to the end of paragraph (a)(1), revising paragraphs (b)(1)(i), (b)(2)(iv)(A), (b)(2)(iv)(C), (c)(1)(i), (c)(1)(ii) and (c)(2)(ii) to read as follows:

§ 75.41 Precision criteria.

(a) * * *

(1) * * * For the purposes of this subpart, each reference method run shall be 30 to 60 minutes in duration.

* * * * *

(b) * * *

(1) * * *

(i) Apply the log transformation to each measured value of either the certified continuous emissions monitoring system, certified flow monitor or reference method, using the following equation:

$l_v = \ln ev$ (Eq. 11)

Where:

e_v= Hourly value generated by the certified continuous emissions monitoring system, certified flow monitoring system, or reference method.

* * * * *

(2) * * *

(iv) * * *

(A) The set of measured hourly values, e_v, generated by the certified continuous emissions monitoring system, certified flow monitoring system, or reference method.

* * * * *

(C) The set of hourly differences, $e_v - e_p$, between the hourly values, e_v, generated by the certified continuous emissions monitoring system, certified flow monitoring system, or reference method and the hourly values, e_p, generated by the proposed alternative monitoring system.

* * * * *

(c) * * *

(1) * * *

(i) Calculate the variance of the certified continuous emission monitoring system, certified flow monitor, or reference method as applicable, S_v^2, and the proposed method, S_p^2, using the following equation.

$$S^2 = \frac{\sum_{i=1}^{n}\left(e_i - e_m\right)^2}{n-1} \qquad \text{(Eq. 23)}$$

(Eq. 23)

Where:

e_i = Measured values of either the certified continuous emission monitoring system, certified flow monitor, or reference method, as applicable, or proposed method.

e_m = Mean of either the certified continuous emission monitoring system or certified flow monitor, or reference method, as applicable, or proposed method values.

n = Total number of paired samples.

(ii) Determine if the variance of the proposed method is significantly different from that of the certified continuous emission monitoring system, certified flow monitor, or reference method, as applicable, by calculating the F-value using the following equation.

$$F = \frac{S_p^2}{S_v^2} \qquad \text{(Eq. 24)}$$

(Eq. 24)

Compare the experimental F-value with the critical value of F at the 95-percent confidence level with n-1 degrees of freedom. The critical value is obtained from a table for F-distribution. If the calculated F-value is greater than the critical value, the proposed method is unacceptable.

(2) * * *

(ii) Use the following equation to calculate the coefficient of correlation, r, between the emissions data from the alternative monitoring system and the continuous emission monitoring system using all hourly data for which paired values were available from both monitoring systems.

$$r = \frac{\sum e_p e_v - \left(\sum e_p\right)\left(\sum e_v\right)/n}{\left(\left[\sum e_p^2 - \left(\sum e_p\right)^2/n\right]\left[\sum e_v^2 - \left(\sum e_v\right)^2/n\right]\right)^{1/2}} \qquad \text{(Eq. 27)}$$

(Eq. 27)

Where:

e_p = Hourly value generated by the alternative monitoring system.

e_v = Hourly value generated by the continuous emission monitoring system.

n = Total number of hours for which data were generated for the tests.

* * * * *

34. Section 75.47 is revised to read as follows:

§ 75.47 Criteria for a class of affected units.

(a) The owner or operator of an affected unit that is determined by the Administrator to be representative of a class of affected units may petition the Administrator under § 75.48 for approval of an alternative monitoring system that may be used at any unit in that class based on testing performed only at the representative unit.

(b) The owner or operator of an affected unit representing a class of affected units shall provide the following information to obtain class status:

(1) A description of the affected unit at which the demonstration will be performed and how it appropriately represents the class of affected units; and

(2) A description and listing of the class of affected units, including a listing of all units and data describing all the affected units which will comprise the class; and

(3) A demonstration that the magnitude of emissions for all units which will comprise the class of affected units are *de minimis.*

(c) If the Administrator determines that the emissions from all affected units which will comprise the class of units are *de minimis,* then the Administrator shall publish notice in the **Federal Register** of each request for approval of class status and shall provide a 30-day period for public comment, prior to granting approval.

(d) The designated representative shall provide the information required in § 75.48 based on testing at the representative unit when petitioning for approval of the alternative monitoring system for members of the class. A request for class status under this section may be submitted simultaneously with a petition under § 75.48, or following approval of a petition under § 75.48.

35. Section 75.48 is amended by revising paragraphs (a) introductory text, and (a)(1), and by adding paragraphs (b) and (c) to read as follows:

§ 75.48 Petition for an alternative monitoring system.

(a) The designated representative shall submit the following information in the petition for approval of an alternative monitoring system for an affected unit, or a class of affected units approved pursuant to § 75.47.

(1) Source identification information for the affected unit at which testing was performed.

* * * * *

(b) The Administrator will publish a notice of receipt of each petition for approval of an alternative monitoring system in the **Federal Register** and, following a public comment period of 30 days, will issue a notice of approval or disapproval of the alternative monitoring system.

(c) No alternative monitoring system approved under this section shall be used under the Acid Rain Program prior to successful completion of all certification tests under § 75.20(f).

Subpart F—Recordkeeping Requirements

36. Section 75.50 is amended by revising paragraph (a) to read as follows:

§ 75.50 General recordkeeping provisions.

(a) *Recordkeeping requirements for affected sources.* The provisions of this section shall remain in effect prior to January 1, 1996. The owner or operator shall meet the requirements of either §§ 75.50 or 75.54 prior to January 1, 1996. On or after January 1, 1996, the owner or operator shall meet the requirements of § 75.54 only.

* * * * *

37. Section 75.51 is amended by adding paragraph (e) to read as follows:

§ 75.51 General recordkeeping provisions for specific situations.

* * * * *

(e) The provisions of this section shall remain in effect prior to January 1, 1996. The owner or operator shall meet the requirements of either §§ 75.51 or 75.55 prior to January 1, 1996. On or after January 1, 1996, the owner or operator shall meet the requirements of § 75.55 only.

38. Section 75.52 is amended by adding paragraph (b) to read as follows:

§ 75.52 Certification, quality assurance and quality control record provisions.

(a) * * *

(b) The provisions of this section shall remain in effect prior to January 1, 1996. The owner or operator shall meet the requirements of either §§ 75.52 or 75.56 prior to January 1, 1996. On or after January 1, 1996, the owner or operator shall meet the requirements of § 75.56 only.

39. Section 75.53 is amended by revising paragraphs (a), (b), (c) introductory text, (c)(1), (c)(2)(ii), (c)(4) introductory text, (c)(4)(ii), (c)(4)(vi), (c)(5)(ii), (c)(6), (c)(7), (c)(8), (c)(9), (d)(1), and (d)(2) and by adding paragraphs (c)(10), and (d)(3) to read as follows:

§ 75.53 Monitoring plan.

(a) *General provisions.* The owner or operator of an affected unit shall prepare and maintain a monitoring plan. Except as provided in paragraph (d) of this section, a monitoring plan shall contain sufficient information on the continuous emission or opacity monitoring systems or excepted monitoring systems under appendix D or E of this part and the use of data derived from these systems to demonstrate that all unit SO_2 emissions, NO_X emissions, CO_2 emissions, and opacity are monitored and reported.

(b) Whenever the owner or operator makes a replacement, modification, or change, either in the certified continuous emission monitoring system or continuous opacity monitoring system or excepted monitoring systems under appendix D or E of this part, including a change in the automated data acquisition and handling system or in the flue gas handling system, that requires recertification, then the owner or operator shall update the monitoring plan.

(c) *Contents of the monitoring plan.* Each monitoring plan shall contain the following:

(1) Precertification information, including, as applicable, the identification of the test strategy, protocol for the relative accuracy test audit, other relevant test information, span calculations, and apportionment strategies under §§ 75.13 through 75.17 of this part.

(2) * * *

(ii) Classification of unit as one of the following: Phase I (including substitution or compensating units), Phase II, new, or nonaffected;

* * * * *

(4) *Monitoring component table.* Identification and description of each monitoring component (including each monitor and its identifiable components such as analyzer and/or probe) in the continuous emission monitoring systems (i.e., SO_2 pollutant concentration monitor, flow monitor, moisture monitor; NO_X pollutant concentration monitor and diluent gas monitor) the continuous opacity monitoring system, or excepted monitoring system (i.e., fuel flowmeter, data acquisition and handling system), including:

* * * * *

(ii) Component/system identification code assigned by the utility to each identifiable monitoring component (such as the analyzer and/or probe). The code shall use a six-digit format, unique to each monitoring component, where the first three digits indicate the number of the component and the second three digits indicate the system to which the component belongs;

* * * * *

(vi) A designation of the system as a primary, redundant backup, non-redundant backup or reference method backup system, as provided for in § 75.10(e).

(5) * * *

(ii) For software components, identification of the provider and a brief description of features;

* * * * *

(6) *Emissions formula table.* A table giving explicit formulas for each reported unit emission parameter, using component/system identification codes to link continuous emission monitoring system or excepted monitoring system observations with reported concentrations, mass emissions, or emission rates, according to the conversions listed in appendix D, E, or F to this part. The formulas must contain all constants and factors required to derive mass emissions or emission rates from component/system code observations, and each emissions formula is identified with a unique three digit code.

(7) *Schematic stack diagrams.* For units monitored by a continuous emission or opacity monitoring system, a schematic diagram identifying entire gas handling system from boiler to stack for all affected units, using identification numbers for units, monitor components, and stacks corresponding to the identification numbers provided in paragraphs (c)(2), (c)(4), (c)(5), and (c)(6) of this section. The schematic diagram must depict stack height and the height of any monitor locations. Comprehensive and/or separate schematic diagrams shall be used to describe groups of units using a common stack.

(8) *Stack and duct engineering diagrams.* For units monitored by a continuous emission or opacity monitoring system, stack and duct engineering diagrams showing the dimensions and location of fans, turning vanes, air preheaters, monitor components, probes, reference method sampling ports and other equipment which affects the monitoring system location, performance or quality control checks.

(9) Inside crosssectional area (ft^2) at flue exit and at flow monitoring location.

(10) *Span and calibration gas.* A table or description identifying maximum potential concentration, maximum expected concentration (if applicable), maximum potential flow rate, maximum potential NO_X emission rate, span value, and full-scale range for each SO_2, NO_X, CO_2, O_2, or flow component monitor. In addition, the table must identify

calibration gas levels for the calibration error test and the linearity check, and calculations made to determine each span value.

(d) * * *

(1) For each gas-fired unit or oil-fired unit for which the owner or operator uses the optional protocol in appendix D of this part for estimating SO_2 mass emissions or appendix E of this part for estimating NO_X emission rate (using a fuel flow meter), the designated representative shall include in the monitoring plan:

(i) A description of the fuel flowmeter (and data demonstrating its flow meter accuracy, when available);

(ii) The installation location of each fuel flowmeter;

(iii) The fuel sampling location(s); and

(iv) Procedures used for calibrating each fuel flowmeter.

(2) For each gas-fired peaking unit and oil-fired peaking unit for which the owner or operator uses the optional procedures in appendix E of this part for estimating NO_X emission rate, the designated representative shall include in the monitoring plan:

(i) A protocol containing methods used to perform the baseline or periodic NO_X emission test, and a copy of initial performance test results (when such results are available);

(ii) Unit operating and capacity factor information demonstrating that the unit qualifies as a peaking unit, as defined in § 72.2 of this chapter; and

(iii) Unit operating parameters related to NO_X formation by the unit.

(3) For each gas-fired unit and diesel-fired unit or unit with a wet flue gas pollution control system for which the designated representative claims an opacity monitoring exemption under § 75.14, the designated representative shall include in the monitoring plan information demonstrating that the unit qualifies for the exemption.

40. Section 75.54 is added to read as follows:

§ 75.54 General recordkeeping provisions.

(a) *Recordkeeping requirements for affected sources.* On or after January 1, 1996, the owner or operator shall meet the requirements of this section. The owner or operator of any affected source subject to the requirements of this part shall maintain for each affected unit a file of all measurements, data, reports, and other information required by this part at the source in a form suitable for inspection for at least three (3) years from the date of each record. Unless otherwise provided, throughout this subpart the phrase ''for each affected unit'' also applies to each group of affected or nonaffected units utilizing a common stack and common monitoring systems, pursuant to §§ 75.13 through 75.18, or utilizing a common pipe header and common fuel flowmeter, pursuant to section 2.1.2 of appendix D of this part. The file shall contain the following information:

(1) The data and information required in paragraphs (b) through (f) of this section, beginning with the earlier of the date of provisional certification, or the deadline in § 75.4(a), (b) or (c);

(2) The supporting data and information used to calculate values required in paragraphs (b) through (f) of this section, excluding the subhourly data points used to compute hourly averages under § 75.10(d), beginning with the earlier of the date of provisional certification, or the deadline in § 75.4(a), (b) or (c);

(3) The data and information required in § 75.55 of this part for specific situations, as applicable, beginning with the earlier of the date of provisional certification, or the deadline in § 75.4(a), (b) or (c);

(4) The certification test data and information required in § 75.56 for tests required under § 75.20, beginning with the date of the first certification test performed, and the quality assurance and quality control data and information required in § 75.56 for tests and the quality assurance/quality control plan required under § 75.21 and appendix B of this part, beginning with the date of provisional certification;

(5) The current monitoring plan as specified in § 75.53, beginning with the initial submission required by § 75.62; and

(6) The quality control plan as described in appendix B to this part, beginning with the date of provisional certification.

(b) *Operating parameter record provisions.* The owner or operator shall record for each hour the following information on unit operating time, heat input, and load separately for each affected unit, and also for each group of units utilizing a common stack and a common monitoring system or utilizing a common pipe header and common fuel flowmeter, except that separate heat input data for each unit shall not be required after January 1, 2000 for any unit, other than an opt-in source, that does not have a NO_X emission limitation under part 76 of this chapter.

(1) Date and hour;

(2) Unit operating time (rounded up to nearest 15 minutes);

(3) Total hourly gross unit load (rounded to nearest MWge) (or steam load in lb/hr at stated temperature and pressure, rounded to the nearest 1000 lb/hr, if elected in the monitoring plan);

(4) Operating load range corresponding to total gross load of 1–10, except for units using a common stack or common pipe header, which may use the number of unit load ranges up to 20 for flow, as specified in the monitoring plan; and

(5) Total heat input (mmBtu, rounded to the nearest tenth).

(c) *SO_2 emission record provisions.* The owner or operator shall record for each hour the information required by this paragraph for each affected unit or group of units using a common stack and common monitoring systems, except as provided under § 75.11(e) or for a gas-fired or oil-fired unit for which the owner or operator is using the optional protocol in appendix D to this part for estimating SO_2 mass emissions:

(1) For SO_2 concentration, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

(i) Component-system identification code as provided for in § 75.53;

(ii) Date and hour;

(iii) Hourly average SO_2 concentration (ppm, rounded to the nearest tenth);

(iv) Hourly average SO_2 concentration (ppm, rounded to the nearest tenth) adjusted for bias, if bias adjustment factor is required as provided for in § 75.24(d);

(v) Percent monitor data availability (recorded to the nearest tenth of a percent) calculated pursuant to § 75.32; and

(vi) Method of determination for hourly average SO_2 concentration using Codes 1–15 in Table 4 of this section.

(2) For flow as measured and reported from each certified primary monitor, certified back-up monitor or other approved method of emissions determination:

(i) Component/system identification code as provided for in § 75.53;

(ii) Date and hour;

(iii) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand);

(iv) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand) adjusted for bias, if bias adjustment factor required as provided for in § 75.24(d);

(v) Hourly average moisture content of flue gases (percent, rounded to the nearest tenth) where SO_2 concentration is measured on dry basis;

(vi) Percent monitor data availability (recorded to the nearest tenth of a percent), calculated pursuant to § 75.32; and

(vii) Method of determination for hourly average flow rate using Codes 1–15 in Table 4.

(3) For SO_2 mass emissions as measured and reported from the certified primary monitoring system(s), certified redundant or non-redundant back-up monitoring system(s), or other approved method(s) of emissions determination:

(i) Date and hour;

(ii) Hourly SO_2 mass emissions (lb/hr, rounded to the nearest tenth);

(iii) Hourly SO_2 mass emissions (lb/hr, rounded to the nearest tenth) adjusted for bias, if bias adjustment factor required, as provided for in § 75.24(d); and

(iv) Identification code for emissions formula used to derive hourly SO_2 mass emissions from SO_2 concentration and flow data in paragraphs (c)(1) and (c)(2) of this section as provided for in § 75.53.

TABLE 4.—CODES FOR METHOD OF EMISSIONS AND FLOW DETERMINATION

[Amended]

Code	Hourly emissions/flow measurement or estimation method
1	Certified primary emission/flow monitoring system.
2	Certified back-up emission/flow monitoring system.
3	Approved alternative monitoring system.
4	Reference method: SO_2: Method 6C. Flow: Method 2. NO_X: Method 7E. CO_2 or O_2: Method 3A.
5	For units with add-on SO_2 and/or NO_X emission controls: SO_2 concentration or NO_X emission rate estimate from Agency preapproved parametric monitoring method.
6	Average of the hourly SO_2 concentrations, CO_2 concentrations, flow, or NO_X emission rate for the hour before and the hour following a missing data period.
7	Hourly average SO_2 concentration, CO_2 concentration, flow rate, or NO_X emission rate using initial missing data procedures.
8	90th percentile hourly SO_2 concentration, flow rate, or NO_X emission rate.
9	95th percentile hourly SO_2 concentration, flow rate, or NO_X emission rate.
10	Maximum hourly SO_2 concentration, flow rate, or NO_X emission rate.
11	Hourly average flow rate or NO_X emission rate in corresponding load range.
12	Maximum potential concentration of SO_2, maximum potential flow rate, or maximum potential NO_X emission rate, as determined using section 2.1 of appendix A of this part, or maximum CO_2 concentration.
13	Other data (specify method).
14	Minimum CO_2 concentration of 5.0 percent CO_2 or maximum O_2 concentration of 14.0 percent to be substituted optionally for measured diluent gas concentrations during unit startup, for NO_X emission rate or SO_2 emission rate in lb/mmBtu or for CO_2 concentration.
15	Fuel analysis data from appendix G of this part for CO_2 mass emissions.

(d) *NO_X emission record provisions.* The owner or operator shall record the information required by this paragraph for each affected unit for each hour, except for a gas-fired peaking unit or oil-fired peaking unit for which the owner or operator is using the optional protocol in appendix E to this part for estimating NO_X emission rate. For each NO_X emission rate as measured and reported from the certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

(1) Component/system identification code as provided for in § 75.53;

(2) Date and hour;

(3) Hourly average NO_X concentration (ppm, rounded to the nearest tenth);

(4) Hourly average diluent gas concentration (percent O_2 or percent CO_2, rounded to the nearest tenth);

(5) Hourly average NO_X emission rate (lb/mmBtu, rounded to nearest hundredth);

(6) Hourly average NO_X emission rate (lb/mmBtu, rounded to nearest hundredth) adjusted for bias, if bias adjustment factor is required as provided for in § 75.24(d);

(7) Percent monitoring system data availability, (recorded to the nearest tenth of a percent), calculated pursuant to § 75.32;

(8) Method of determination for hourly average NO_X emission rate using Codes 1–15 in Table 4; and

(9) Identification code for emissions formula used to derive hourly average NO_X emission rate, as provided for in § 75.53.

(e) *CO_2 emission record provisions.* The owner or operator shall record or calculate CO_2 emissions for each affected unit using one of the following methods specified in this section:

(1) If the owner or operator chooses to use a CO_2 continuous emission monitoring system (including an O_2 monitor and flow monitor as specified in appendix F of this part), then the owner or operator shall record for each hour the following information for CO_2 mass emissions, as measured and reported from the certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

(i) Component/system identification code as provided for in § 75.53;

(ii) Date and hour;

(iii) Hourly average CO_2 concentration (in percent, rounded to the nearest tenth);

(iv) Hourly average volumetric flow rate (scfh, rounded to the nearest thousand scfh);

(v) Hourly CO_2 mass emissions (tons/hr, rounded to the nearest tenth);

(vi) Percent monitor data availability (recorded to the nearest tenth of a percent); calculated pursuant to § 75.32;

(vii) Method of determination for hourly CO_2 mass emissions using Codes 1–15 in Table 4; and

(viii) Identification code for emissions formula used to derive average hourly CO_2 mass emissions, as provided for in § 75.53.

(2) As an alternative to § 75.54(e)(1), the owner or operator may use the procedures in § 75.13 and in appendix G to this part, and shall record daily the following information for CO_2 mass emissions:

(i) Date;

(ii) Daily combustion-formed CO_2 mass emissions (tons/day, rounded to the nearest tenth);

(iii) For coal-fired units, flag indicating whether optional procedure to adjust combustion-formed CO_2 mass emissions for carbon retained in flyash has been used and, if so, the adjustment;

(iv) For a unit with a wet flue gas desulfurization system or other controls generating CO_2, daily sorbent-related CO_2 mass emissions (tons/day, rounded to the nearest tenth); and

(v) For a unit with a wet flue gas desulfurization system or other controls generating CO_2, total daily CO_2 mass emissions (tons/day, rounded to the nearest tenth) as sum of combustion-formed emissions and sorbent-related emissions.

(f) *Opacity records.* The owner or operator shall record opacity data as specified by the State or local air pollution control agency. If the State or local air pollution control agency does not specify recordkeeping requirements for opacity, then record the information required by paragraphs (f) (1) through (5) of this section for each affected unit, except as provided for in § 75.14 (b), (c), and (d). The owner or operator shall also keep records of all incidents of opacity monitor downtime during unit operation, including reason(s) for the monitor outage(s) and any corrective action(s) taken for opacity, as measured and reported by the continuous opacity monitoring system:

(1) Component/system identification code;

(2) Date, hour, and minute;

(3) Average opacity of emissions for each six minute averaging period (in percent opacity);

(4) If the average opacity of emissions exceeds the applicable standard, then a code indicating such an exceedance has occurred; and

(5) Percent monitor data availability, recorded to the nearest tenth of a percent, calculated according to the requirements of the procedure recommended for State Implementation Plans in appendix M of part 51 of this chapter.

41. Section 75.55 is added to read as follows:

§ 75.55 General recordkeeping provisions for specific situations.

(a) *Specific SO_2 emission record provisions for units with qualifying Phase I technology.* In addition to the SO_2 emissions information required in § 75.54(c), from January 1, 1997, through December 31, 1999, the owner or operator shall record the applicable information in this paragraph for each affected unit on which SO_2 emission controls have been installed and operated for the purpose of meeting qualifying Phase I technology requirements pursuant to § 72.42 of this chapter and § 75.15.

(1) For units with post-combustion emission controls:

(i) Component/system identification codes for each inlet and outlet SO_2-diluent continuous emission monitoring system;

(ii) Date and hour;

(iii) Hourly average inlet SO_2 emission rate (lb/mmBtu, rounded to nearest hundredth);

(iv) Hourly average outlet SO_2 emission rate (lb/mmBtu, rounded to nearest hundredth);

(v) Percent data availability for both inlet and outlet SO_2-diluent continuous emission monitoring systems (recorded to the nearest tenth of a percent), calculated pursuant to Equation 8 of § 75.32 (for the first 8,760 unit operating hours following initial certification) and Equation 9 of § 75.32, thereafter; and

(vi) Identification code for emissions formula used to derive hourly average inlet and outlet SO_2 mass emissions rates for each affected unit or group of units using a common stack.

(2) For units with combustion and/or pre-combustion emission controls:

(i) Component/system identification codes for each outlet SO_2-diluent continuous emission monitoring system;

(ii) Date and hour;

(iii) Hourly average outlet SO_2 emission rate (lb/mmBtu, rounded to nearest hundredth);

(iv) For units with combustion controls, average daily inlet SO_2 emission rate (lb/mmBtu, rounded to nearest hundredth), determined by coal sampling and analysis procedures in § 75.15; and

(v) For units with pre-combustion controls (i.e., fuel pretreatment), fuel analysis demonstrating the weight, sulfur content, and gross calorific value of the product and raw fuel lots.

(b) [Reserved]

(c) *Specific SO_2 emission record provisions for gas-fired or oil-fired units using optional protocol in appendix D of this part.* In lieu of recording the information in § 75.54(c) of this section, the owner or operator shall record the applicable information in this paragraph for each affected gas-fired or oil-fired unit for which the owner or operator is using the optional protocol in appendix D of this part for estimating SO_2 mass emissions.

(1) For each hour when the unit is combusting oil:

(i) Date and hour;

(ii) Hourly average flow rate of oil with the units in which oil flow is recorded, (gal/hr, lb/hr, m^3/hr, or bbl/hr, rounded to the nearest tenth)(flag value if derived from missing data procedures);

(iii) Sulfur content of oil sample used to determine SO_2 mass emissions, rounded to nearest hundredth for diesel fuel or to the nearest tenth of a percent for other fuel oil (flag value if derived from missing data procedures);

(iv) Method of oil sampling (flow proportional, continuous drip, as delivered or manual);

(v) Mass of oil combusted each hour (lb/hr, rounded to the nearest tenth);

(vi) SO_2 mass emissions from oil (lb/hr, rounded to the nearest tenth);

(vii) For units using volumetric oil flowmeters, density of oil (flag value if derived from missing data procedures);

(viii) Gross calorific value (heat content) of oil, used to determine heat input (Btu/mass unit) (flag value if derived from missing data procedures);

(ix) Hourly heat input rate from oil according to procedures in appendix F of this part (mmBtu/hr, to the nearest tenth); and

(x) Fuel usage time for combustion of oil during the hour, rounded up to the nearest 15 min.

(2) For gas-fired units or oil-fired units using the optional protocol in appendix D of this part of daily manual oil sampling, when the unit is combusting oil, the highest sulfur content recorded from the most recent 30 daily oil samples rounded to nearest tenth of a percent.

(3) For each hour when the unit is combusting gaseous fuel,

(i) Date and hour;

(ii) Hourly heat input rate from gaseous fuel according to procedures in appendix F to this part (mmBtu/hr, rounded to the nearest tenth);

(iii) Sulfur content or SO_2 emission rate, in one of the following formats, in accordance with the appropriate procedure from appendix D of this part:

(A) Sulfur content of gas sample, (rounded to the nearest 0.1 grains/100 scf) (flag value if derived from missing data procedures); or

(B) SO_2 emission rate of 0.0006 lb/mmBtu for pipeline natural gas;

(iv) Hourly flow rate of gaseous fuel, in 100 scfh (flag value if derived from missing data procedures);

(v) Gross calorific value (heat content) of gaseous fuel, used to determine heat input (Btu/scf) (flag value if derived from missing data procedures);

(vi) Heat input rate from gaseous fuel (mmBtu/hr, rounded to the nearest tenth);

(vii) SO_2 mass emissions due to the combustion of gaseous fuels, lb/hr; and

(viii) Fuel usage time for combustion of gaseous fuel during the hour, rounded up to the nearest 15 min.

(4) For each oil sample or sample of diesel fuel:

(i) Date of sampling;

(ii) Sulfur content (percent, rounded to the nearest hundredth for diesel fuel and to the nearest tenth for other fuel oil) (flag value if derived from missing data procedures);

(iii) Gross calorific value or heat content (Btu/lb) (flag value if derived from missing data procedures); and

(iv) Density or specific gravity, if required to convert volume to mass (flag value if derived from missing data procedures).

(5) For each daily sample of gaseous fuel:

(i) Date of sampling;

(ii) Sulfur content (grains/100 scf, rounded to the nearest tenth) (flag value if derived from missing data procedures);

(6) For each monthly sample of gaseous fuel:

(i) Date of sampling;

(ii) Gross calorific value or heat content (Btu/scf) (flag value if derived from missing data procedures).

(d) *Specific NO_X emission record provisions for gas-fired peaking units or* *oil-fired peaking units using optional protocol in appendix E of this part.* In lieu of recording the information in paragraph § 75.54(d), the owner or operator shall record the applicable information in this paragraph for each affected gas-fired peaking unit or oil-fired peaking unit for which the owner or operator is using the optional protocol in appendix E of this part for estimating NO_X emission rate.

(1) For each hour when the unit is combusting oil,

(i) Date and hour;

(ii) Hourly average fuel flow rate of oil with the units in which oil flow is recorded (gal/hour, lb/hr or bbl/hour) (flag value if derived from missing data procedures);

(iii) Gross calorific value (heat content) of oil, used to determine heat input (Btu/lb) (flag value if derived from missing data procedures);

(iv) Hourly average NO_X emission rate from combustion of oil (lb/mmBtu);

(v) Heat input rate of oil (mmBtu/hr, rounded to the nearest tenth); and

(vi) Fuel usage time for combustion of oil during the hour, rounded to the nearest 15 min.

(2) For each hour when the unit is combusting gaseous fuel,

(i) Date and hour;

(ii) Hourly average fuel flow rate of gaseous fuel (100 scfh) (flag value if derived from missing data procedures);

(iii) Gross calorific value (heat content) of gaseous fuel, used to determine heat input (Btu/scf) (flag value if derived from missing data procedures);

(iv) Hourly average NO_X emission rate from combustion of gaseous fuel (lb/mmBtu, rounded to nearest hundredth);

(v) Heat input rate from gaseous fuel (mmBtu/hr, rounded to the nearest tenth); and

(vi) Fuel usage time for combustion of gaseous fuel during the hour, rounded to the nearest 15 min.

(3) For each hour when the unit combusts any fuel:

(i) Date and hour;

(ii) Total heat input from all fuels (mmBtu, rounded to the nearest tenth);

(iii) Hourly average NO_X emission rate for the unit for all fuels;

(iv) For stationary gas turbines and diesel or dual-fuel reciprocating engines, hourly averages of operating parameters under section 2.3 of appendix E (flag if value is outside of manufacturer's recommended range);

(v) For boilers, hourly average boiler O_2 reading (percent, rounded to the nearest tenth) (flag if value exceeds by more than 2 percentage points the O_2 level recorded at the same heat input during the previous NO_X emission rate test).

(4) For each fuel sample:

(i) Date of sampling;

(ii) Gross calorific value (heat content) (Btu/lb for oil, Btu/scf for gaseous fuel); and

(iii) Density or specific gravity, if required to convert volume to mass.

(e) [Reserved]

(f) The owner or operator shall meet the requirements of this section on or after January 1, 1996.

42. Section 75.56 is added to read as follows:

§ 75.56 Certification, quality assurance and quality control record provisions.

(a) *Continuous emission or opacity monitoring systems.* The owner or operator shall record the applicable information in this section for each certified monitor or certified monitoring system (including certified backup monitors) measuring and recording emissions or flow from an affected unit.

(1) For each SO_2 or NO_X pollutant concentration monitor, flow monitor, CO_2 monitor, or diluent gas monitor, the owner or operator shall record the following for all daily and 7-day calibration error tests, including any follow-up tests after corrective action:

(i) Component/system identification code;

(ii) Instrument span;

(iii) Date and hour;

(iv) Reference value, (i.e., calibration gas concentration or reference signal value, in ppm or other appropriate units);

(v) Observed value (monitor response during calibration, in ppm or other appropriate units);

(vi) Percent calibration error (rounded to nearest tenth of a percent); and

(vii) For 7-day calibration tests for certification or recertification, a certification from the cylinder gas vendor or CEMS vendor, that calibration gas as defined in § 72.2 and appendix A of this part, were used to conduct calibration error testing; and

(viii) Description of any adjustments, corrective actions, or maintenance following test.

(2) For each flow monitor, the owner or operator shall record the following for all daily interference checks, including any follow-up tests after corrective action:

(i) Code indicating whether monitor passes or fails the interference check; and

(ii) Description of any adjustments, corrective actions, or maintenance following test.

(3) For each SO_2 or NO_X pollutant concentration monitor, CO_2 monitor, or diluent gas monitor, the owner or operator shall record the following for the initial and all subsequent linearity check(s), including any follow-up tests after corrective action:

(i) Component/system identification code;

(ii) Instrument span;

(iii) Date and hour;

(iv) Reference value (i.e., reference gas concentration, in ppm or other appropriate units);

(v) Observed value (average monitor response at each reference gas concentration, in ppm or other appropriate units);

(vi) Percent error at each of three reference gas concentrations (rounded to nearest tenth of a percent); and

(vii) Description of any adjustments, corrective action, or maintenance following test.

(4) For each flow monitor, where applicable, the owner or operator shall record the following for all quarterly leak checks, including any follow-up tests after corrective action:

(i) Code indicating whether monitor passes or fails the quarterly leak check; and

(ii) Description of any adjustments, corrective actions, or maintenance following test.

(5) For each SO_2 pollutant concentration monitor, flow monitor, CO_2 pollutant concentration monitor; NO_X continuous emission monitoring system, SO_2-diluent continuous emission monitoring system, and approved alternative monitoring system, the owner or operator shall record the following information for the initial and all subsequent relative accuracy tests and test audits:

(i) Date and hour;

(ii) Reference method(s) used;

(iii) Individual test run data from the relative accuracy test audit for the SO_2 concentration monitor, flow monitor, CO_2 pollutant concentration monitor, NO_X continuous emission monitoring system, SO_2-diluent continuous emission monitoring system, or approved alternative monitoring systems, including:

(A) Date, hour, and minute of beginning of test run,

(B) Date, hour, and minute of end of test run,

(C) Component/system identification code,

(D) Run number,

(E) Run data for monitor;

(F) Run data for reference method; and

(G) Flag value (0 or 1) indicating whether run has been used in calculating relative accuracy and bias values.

(iv) Calculations and tabulated results, as follows:

(A) Arithmetic mean of the monitoring system measurement values, reference method values, and of their differences, as specified in Equation A–7 in appendix A to this part.

(B) Standard deviation, as specified in Equation A–8 in appendix A to this part.

(C) Confidence coefficient, as specified in Equation A–9 in appendix A to this part.

(D) Relative accuracy test results, as specified in Equation A–10 in appendix A to this part. (For the 3-level flow monitor test only, relative accuracy test results should be recorded at each of three gas velocities. Each of these three gas velocities shall be expressed as a total gross unit load, rounded to the nearest MWe or as steam load, rounded to the nearest thousand lb/hr.)

(E) Bias test results as specified in section 7.6.4 in appendix A to this part.

(F) Bias adjustment factor from Equations A–11 and A–12 in appendix A to this part for any monitoring system or component that failed the bias test and 1.0 for any monitoring system or component that passed the bias test. (For flow monitors only, bias adjustment factors should be recorded at each of three gas velocities).

(v) Description of any adjustment, corrective action, or maintenance following test.

(vi) F-factor value(s) used to convert NO_X pollutant concentration and diluent gas (O_2 or CO_2) concentration measurements into NO_X emission rates (in lb/mmBtu), heat input or CO_2 emissions.

(6) [Reserved]

(7) Results of all trial runs and certification tests and quality assurance activities and measurements (including all reference method field test sheets, charts, records of combined system responses, laboratory analyses, and example calculations) necessary to substantiate compliance with all relevant appendices in this part. This information shall include, but shall not be limited to, the following reference method data:

(i) For each run of each test using Method 2 in appendix A of part 60 of this chapter to determine volumetric flow rate:

(A) Pitot tube coefficient;

(B) Date of pitot tube calibration;

(C) Average square root of velocity head of stack gas (inches of water) for the run;

(D) Average absolute stack gas temperature, °R;

(E) Barometric pressure at test port, inches of mercury;

(F) Stack static pressure, inches of H_2O;

(G) Absolute stack gas pressure, inches of mercury;

(H) Moisture content of stack gas, percent;

(I) Molecular weight of stack gas, wet basis (lb/lb-mole);

(J) Number of reference method measurements during the run; and

(K) Total volumetric flowrate (scfh, wet basis).

(ii) For each test using Method 2 in appendix A of part 60 of this chapter to determine volumetric flow rate:

(A) Information indicating whether or not the location meets requirements of Method 1 in appendix A of part 60 of this chapter;

(B) Information indicating whether or not the equipment passed the leak check after every run included in the relative accuracy test;

(C) Stack inside diameter at test port (ft);

(D) Duct side height and width at test port (ft);

(E) Stack or duct cross-sectional area at test port (ft^2); and

(F) Designation as to the load level of the test.

(iii) For each run of each test using Method 6C, 7E, or 3A in appendix A of part 60 of this chapter to determine SO_2, NO_X, CO_2, or O_2 concentration:

(A) Run start date;

(B) Run start time;

(C) Run end date;

(D) Run end time;

(E) Span of reference method analyzer;

(F) Reference gas concentration (low, mid-, and high gas levels);

(G) Initial and final analyzer calibration response (low, mid- and high gas levels);

(H) Analyzer calibration error (low, mid-, and high gas levels);

(I) Pre-test and post-test analyzer bias (zero and upscale gas levels);

(J) Calibration drift and zero drift of analyzer;

(K) Indication as to which data are from a pretest and which are from a posttest;

(L) Calibration gas level (zero, mid-level, or high); and

(M) Moisture content of stack gas, in percent, if needed to convert to moisture basis of CEMS being tested.

(iv) For each test using Method 6C, 7E, or 3A in appendix A of part 60 of this chapter to determine SO_2, NO_X CO_2, or O_2 concentration:

(A) Pollutant being measured;

(B) Test number;

(C) Date of interference test;

(D) Results of interference test;

(E) Date of NO_2 to NO conversion test (Method 7E only);

(F) Results of NO_2 to NO conversion test (Method 7E only).

(v) For each calibration gas cylinder used to test using Method 6C, 7E, or 3A in appendix A of part 60 of this chapter to determine SO_2, NO_X, CO_2, or O_2 concentration:

(A) Cylinder gas vendor name from certification;

(B) Cylinder number;

(C) Cylinder expiration date;

(D) Pollutant(s) in cylinder; and

(E) Cylinder gas concentration(s).

(b) *Excepted monitoring systems for gas-fired and oil-fired units.* The owner or operator shall record the applicable information in this section for each excepted monitoring system following the requirements of appendix D of this part or appendix E of this part for determining and recording emissions from an affected unit.

(1) For each oil-fired unit or gas-fired unit using the optional procedures of appendix D of this part for determining SO_2 mass emissions and heat input or the optional procedures of appendix E of this part for determining NO_X emission rate, for certification and quality assurance testing of fuel flowmeters:

(i) Date of test,

(ii) Upper range value of the fuel flowmeter,

(iii) Flowmeter measurements during accuracy test,

(iv) Reference flow rates during accuracy test,

(v) Average flowmeter accuracy as a percent of upper range value,

(vi) Fuel flow rate level (low, mid-level, or high); and

(vi) Description of fuel flowmeter calibration specification or procedure (in the certification application, or periodically if a different method is used for annual quality assurance testing).

(2) For gas-fired peaking units or oil-fired peaking units using the optional procedures of appendix E of this part, for each initial performance, periodic, or quality assurance/quality control-related test:

(i) For each run of emissions data;

(A) Run start date and time;

(B) Run end date and time;

(C) Fuel flow (lb/hr, gal/hr, scf/hr, bbl/hr, or m^3/hr);

(D) Gross calorific value (heat content) of fuel (Btu/lb or Btu/scf);

(E) Density of fuel (if needed to convert mass to volume);

(F) Total heat input during the run (mmBtu);

(G) Hourly heat input rate for run (mmBtu/hr);

(H) Response time of the O_2 and NO_X reference method analyzers;

(I) NO_X concentration (ppm);

(J) O_2 concentration (percent O_2);

(K) NO_X emission rate (lb/mmBtu); and

(L) Fuel or fuel combination (by heat input fraction) combusted.

(ii) For each unit load and heat input;

(A) Average NO_X emission rate (lb/mmBtu);

(B) F-factor used in calculations;

(C) Average heat input rate (mmBtu/hr);

(D) Unit operating parametric data related to NO_X formation for that unit type (e.g., excess O_2 level, water/fuel ratio); and

(E) Fuel or fuel combination (by heat input fraction) combusted.

(iii) For each test report;

(A) Graph of NO_X emission rate against heat input rate;

(B) Results of the tests for verification of the accuracy of emissions calculations and missing data procedures performed by the automated data acquisition and handling system, and the calculations used to produce NO_X emission rate data at different heat input conditions; and

(C) Results of all certification tests and quality assurance activities and measurements (including reference method field test sheets, charts, laboratory analyses, example calculations, or other data as appropriate), necessary to substantiate compliance with the requirements of appendix E of this part.

(c) The owner or operator shall meet the requirements of this section on or after January 1, 1996.

Subpart G—Reporting Requirements

43. Section 75.60 is amended by revising paragraphs (b)(1) and (b)(2), and by adding paragraph (c) to read as follows:

§ 75.60 General provisions.

* * * * *

(b) * * *

(1) All initial certification or recertification testing notifications, initial certification or recertification applications, monitoring plans, petitions for alternative monitoring systems, notifications, electronic quarterly reports, and other communications required by this subpart shall be submitted to the Administrator.

(2) Copies of initial certification or recertification testing notifications, certification or recertification applications and monitoring plans shall be submitted to the appropriate Regional office of the U.S. Environmental Protection Agency and appropriate State or local air pollution control agency.

(c) *Confidentiality of data.* The following provisions shall govern the confidentiality of information submitted under this part.

(1) All emission data reported in quarterly reports under § 75.64 shall remain public information.

(2) For information submitted under this part other than emission data submitted in quarterly reports, the designated representative must assert a claim of confidentiality at the time of submission for any information he or she wishes to have treated as confidential business information (CBI) under subpart B of part 2 of this chapter. Failure to assert a claim of confidentiality at the time of submission may result in disclosure of the information by EPA without further notice to the designated representative.

(3) Any claim of confidentiality for information submitted in quarterly reports under § 75.64 must include substantiation of the claim. Failure to provide substantiation may result in disclosure of the information by EPA without further notice.

(4) As provided under subpart B of part 2 of this chapter, EPA may review information submitted to determine whether it is entitled to confidential treatment even when confidentiality claims are initially received. The EPA will contact the designated representative as part of such a review process.

44. Section 75.61 is revised to read as follows:

§ 75.61 Notifications.

(a) *Submission.* The designated representative for an affected unit (or owner or operator, as specified) shall submit notice to the Administrator, to the appropriate EPA Regional Office, and to the applicable State air pollution control agency for the following purposes, as required by this part.

(1) *Initial certification and recertification test notifications.* The owner or operator or designated representative for an affected unit shall submit written notification of initial certification tests, recertification tests, and revised test dates as specified in § 75.20 for continuous emission monitoring systems, for alternative monitoring systems under subpart E of this part, or for excepted monitoring systems under appendix E of this part, except as provided in paragraph (a)(4) of this section and except for testing only of the data acquisition and handling system.

(i) *Notification of initial certification testing.* Initial certification test notifications shall be submitted not later than 45 days prior to the first scheduled day of initial certification testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier.

(ii) *Notification of certification retesting and recertification testing.* For retesting following a loss of certification under § 75.20(a)(5) or for recertification under § 75.20(b), notice of testing shall be submitted either in writing or by telephone at least 7 days prior to the first scheduled day of testing; except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier.

(iii) *Repeat of testing without notice.* Notwithstanding the above notice requirements, the owner or operator may elect to repeat a certification test immediately, without advance notification, whenever the owner or operator has determined during the certification testing that a test was failed or that a second test is necessary in order to attain a reduced relative accuracy test frequency.

(2) *New unit, newly affected unit, new stack, or new flue gas desulfurization system operation notification.* The designated representative for an affected unit shall submit written notification: For a new unit or a newly affected unit, of the planned date when a new unit or newly affected unit will commence commercial operation or, for new stack or flue gas desulfurization system, of the planned date when a new stack or flue gas desulfurization system will be completed and emissions will first exit to the atmosphere.

(i) Notification of the planned date shall be submitted not later than 45 days prior to the date the unit commences commercial operation, or not later than 45 days prior to the date when a new stack or flue gas desulfurization system exhausts emissions to the atmosphere.

(ii) If the date when the unit commences commercial operation or the date when the new stack or flue gas desulfurization system exhausts emissions to the atmosphere, whichever is applicable, changes from the planned date, a notification of the actual date shall be submitted not later than 7 days following: The date the unit commences commercial operation or, the date when a new stack or flue gas desulfurization system exhausts emissions to the atmosphere.

(3) *Unit shutdown and recommencement of commercial operation.* The designated representative for an affected unit that will be shutdown on the relevant compliance date in § 75.4(a) and that is relying on the provisions in § 75.4(d) to postpone certification testing shall submit notification of unit shutdown and recommencement of commercial operation as follows:

(i) For planned unit shutdowns, written notification of the planned shutdown date and planned date of recommencement of commercial operation shall be submitted 45 calendar days prior to the deadline in § 75.4(a). For unit shutdowns that are not planned 45 days prior to the deadline in § 75.4(a), written notification of the planned shutdown date and planned date of recommencement of commercial operation shall be submitted no later than 7 days after the date the owner or operator is able to schedule the shutdown date and date of recommencement of commercial operation. If the actual shutdown date or the actual date of recommencement of commercial operation differs from the planned date, written notice of the actual date shall be submitted no later than 7 days following the actual date of shutdown or of recommencement of commercial operation, as applicable;

(ii) For unplanned unit shutdowns, written notification of actual shutdown date and the expected date of recommencement of commercial operation shall be submitted no later than 7 days after the shutdown. If the actual date of recommencement of commercial operation differs from the expected date, written notice of the actual date shall be submitted no later than 7 days following the actual date of recommencement of commercial operation.

(4) *Use of backup fuels for appendix E procedures.* The designated representative for an affected oil-fired or gas-fired peaking unit that is using an excepted monitoring system under appendix E of this part and that is relying on the provisions in § 75.4(f) to postpone testing of a fuel shall submit written notification of that fact no later than 45 days prior to the deadline in § 75.4(a). The designated representative shall also submit a notification that such a fuel has been combusted no later than 7 days after the first date of combustion of any fuel for which testing has not been performed under appendix E after the deadline in § 75.4(a). Such notice shall also include notice that testing under Appendix E either was performed during the initial combustion or notice of the date that testing will be performed.

(5) *Periodic relative accuracy test audits.* The owner or operator or designated representative of an affected unit shall submit written notice of the date of periodic relative accuracy testing performed under appendix B of this part no later than 21 days prior to the first scheduled day of testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier. Notwithstanding these notice requirements, the owner or operator may elect to repeat a periodic relative accuracy test immediately, without additional notification whenever the owner or operator has determined that a test was failed, or that a second test is necessary in order to attain a reduced relative accuracy test frequency.

(6) *Notice of combustion of emergency fuel under appendix D or E.* The designated representative of an oil-fired unit or gas-fired unit using appendix D or E of this part shall provide notice of the combustion of emergency fuel according to the following:

(i) For an affected oil-fired or gas-fired unit that is using an excepted monitoring system under appendix D or E of this part, where the owner or operator is postponing installation or testing of a fuel flowmeter for emergency fuel under § 75.4(g), the designated representative shall submit written notification of postponement of installation or testing no later than 45 days prior to the deadline in § 75.4(a). The designated representative shall also submit a notification that emergency fuel has been combusted no later than 7 days after the first date of combustion of the emergency fuel after the deadline in § 75.4(a).

(ii) The designated representative of a unit that has received approval of a petition under § 75.66 for exemption from one or more of the requirements of appendix E of this part for certification of an excepted monitoring system under appendix E of this part for a unit combusting emergency fuel shall submit written notice of each period of combustion of the emergency fuel with the next quarterly report submitted under § 75.64 for each calendar quarter in which emergency fuel is combusted, including notice specifying the exact dates and hours during which the emergency fuel was combusted.

(b) The owner or operator or designated representative shall submit notification of certification tests and recertification tests for continuous opacity monitoring systems, as specified in § 75.20(c)(6) to the State or local air pollution control agency.

(c) If the Administrator determines that notification substantially similar to that required in this section is required by any other State or local agency, the owner or operator or designated representative may send the Administrator a copy of that notification to satisfy the requirements of this section, provided the ORISPL unit identification number(s) is denoted.

45. Section 75.62 is amended by revising paragraph (a) and adding paragraph (c) to read as follows:

§ 75.62 Monitoring plan.

(a) *Submission.* The designated representative for an affected unit shall submit the monitoring plan to the Administrator no later than 45 days prior to the first scheduled certification test, other than testing of a fuel flowmeter or an excepted monitoring system under appendix D of this part. The designated representative shall submit the monitoring plan for a Phase II unit using an excepted monitoring system under appendix D of this part to the Administrator no later than November 15, 1994.

* * * * *

(c) *Format.* Each monitoring plan shall be submitted in a format specified by the Administrator, including information in electronic format and on paper.

46. Section 75.63 is revised to read as follows:

§ 75.63 Initial certification or recertification application.

(a) *Submission.* The designated representative for an affected unit or a combustion source seeking to enter the Opt-in Program in accordance with part 74 of this chapter shall submit the application to the Administrator within 45 days after completing all initial certification tests or recertification tests.

(b) *Contents.* Each application for initial certification or recertification shall contain the following information:

(1) A copy of the monitoring plan (or any modifications to the monitoring plan) for the unit, or units, or combustion sources seeking to enter the Opt-in Program in accordance with part

74 of this chapter, if not previously submitted.

(2) The results of the test(s) required by § 75.20, including the type of test conducted, testing date, and field data sheets required by § 75.52 (or § 75.56, no later than January 1, 1996), and including the results of any failed tests that had been repeated pursuant to the requirements in § 75.20.

(3) Results of the tests for verification of the accuracy of emissions and volumetric flow calculations performed by the automated data acquisition and handling system, including a summary of equations used to convert component data to units of the standard and to calculate substitute data for missing data periods, including sample calculations.

(c) *Format.* Each certification application shall be submitted in a format to be specified by the Administrator, including test results in electronic format and field data sheets required by § 75.52 (or § 75.56, no later than January 1, 1996) on paper where the information required under § 75.56(a)(7) shall be submitted on paper.

47. Section 75.64 is amended by revising the first two sentences of paragraph (a) introductory text, by revising paragraphs (a)(5), (b) and (d), by revising the last sentence of paragraph (e) introductory text and by removing paragraphs (e)(1) and (2) to read as follows:

§ 75.64 Quarterly reports.

(a) *Electronic submission.* The designated representative for an affected unit shall electronically report the data and information in paragraphs (a), (b), and (c) of this section to the Administrator quarterly, beginning with the data from the later of: the last (partial) calendar quarter of 1993 (where the calendar quarter data begins at November 15, 1993); or the calendar quarter corresponding to the relevant deadline for certification in § 75.4(a), (b), or (c). For any provisionally-certified monitoring system, some or all of the quarterly data may be invalidated, if the Administrator subsequently issues a notice of disapproval within 120 days of receipt of the complete initial certification application or within 60 days of receipt of the complete recertification application for the monitoring system. * * *

(5) Total heat input (mmBtu) for quarter and cumulative heat input for calendar year.

* * * * *

(b) The designated representative shall affirm that the component/system identification codes and formulas in the quarterly electronic reports, submitted to the Administrator pursuant to § 75.53, represent current operating conditions.

* * * * *

(d) *Electronic format.* Each quarterly report shall be submitted in a format to be specified by the Administrator, including both electronic submission of data and paper submission of compliance certifications.

(e) * * * Each report shall include all measurements and calculations necessary to substantiate that the qualifying technology achieves the overall percentage reduction in SO_2 emissions.

48. Section 75.65 is revised to read as follows:

§ 75.65 Opacity reports.

The owner or operator or designated representative shall report excess emissions of opacity recorded under §§ 75.50(f) or 75.54(f) to the applicable State or local air pollution control agency, in a format specified by the applicable State or local air pollution control agency.

49. Section 75.66 is amended by redesignating paragraphs (a), (b), (c), (d), (e) and (f) as paragraphs (b), (c), (d), (e), (f) and (i), by adding new paragraphs (a), (g), and (h), and by revising newly designated paragraphs (b), (c), and (i), to read as follows:

§ 75.66 Petitions to the Administrator.

(a) *General.* The designated representative for an affected unit subject to the requirements of this part may submit petitions to the Administrator. Any petitions shall be submitted in accordance with the requirements of this section. The designated representative shall comply with the signatory requirements of § 72.21 of this chapter for each submission.

(b) *Alternative flow monitoring method petition.* In cases where no location exists for installation of a flow monitor in either the stack or the ducts serving an affected unit that satisfies the minimum physical siting criteria in appendix A of this part or where installation of a flow monitor in either the stack or duct is demonstrated to the satisfaction of the Administrator to be technically infeasible, the designated representative for the affected unit may petition the Administrator for an alternative method for monitoring volumetric flow. The petition shall, at a minimum, contain the following information:

(1) Identification of the affected unit(s);

(2) Description of why the minimum siting criteria cannot be met within the existing ductwork or stack(s). This description shall include diagrams of the existing ductwork or stack, as well as documentation of any attempts to locate a flow monitor; and

(3) Description of proposed alternative method for monitoring flow.

(c) *Alternative to standards incorporated by reference.* The designated representative for an affected unit may apply to the Administrator for an alternative to any standard incorporated by reference and prescribed in this part. The designated representative shall include the following information in an application:

(1) A description of why the prescribed standard is not being used;

(2) A description and diagram(s) of any equipment and procedures used in the proposed alternative;

(3) Information demonstrating that the proposed alternative produces data acceptable for use in the Acid Rain Program, including accuracy and precision statements, NIST traceability certificates or protocols, or other supporting data, as applicable to the proposed alternative.

* * * * *

(g) *Petitions for emissions or heat input apportionments.* The designated representative of an affected unit shall provide information to describe a method for emissions or heat input apportionment under §§ 75.13, 75.16, 75.17, or appendix D of this part. This petition may be submitted as part of the monitoring plan. Such a petition shall contain, at a minimum, the following information:

(1) A description of the units, including their fuel type, their boiler type, and their categorization as Phase I units, substitution units, compensating units, Phase II units, new units, or non-affected units;

(2) A formula describing how the emissions or heat input are to be apportioned to which units;

(3) A description of the methods and parameters used to apportion the emissions or heat input; and

(4) Any other information necessary to demonstrate that the apportionment method accurately measures emissions or heat input and does not underestimate emissions or heat input from affected units.

(h) *Partial recertification petition.* The designated representative of an affected unit may provide information and petition the Administrator to specify which of the certification tests required by § 75.20 apply for partial recertification of the affected unit. Such a petition shall include the following information:

(1) Identification of the monitoring system(s) being changed;

(2) A description of the changes being made to the system;

(3) An explanation of why the changes are being made; and

(4) A description of the possible effect upon the monitoring system's ability to measure, record, and report emissions.

(i) *Any other petitions to the Administrator under this part.* The designated representative for an affected unit shall include sufficient information for the evaluation of any other petition submitted to the Administrator under this part.

50. Section 75.67 is amended by revising paragraph (a) to read as follows:

§ 75.67 Retired units petitions.

(a) For units that will be permanently retired prior to January 1, 1995, if the designated representative submits a complete petition, as required in § 72.8 of this chapter, to the Administrator prior to the deadline in § 75.4 by which the continuous emission or opacity monitoring systems must complete the required certification tests, the Administrator will issue an exemption from the requirements of this part, including the requirement to install and certify continuous emission monitoring systems.

* * * * *

Appendix A to Part 75—Specifications and Test Procedures

51. Appendix A to part 75, section 1 is amended by revising section 1.1.2, by revising the fourth sentence in section 1.2; and by revising section 1.2.1 and by revising the first sentence of section 1.2.2 to read as follows:

1. Installation and Measurement Location

1.1 * * *

1.1.1 * * *

1.1.2 Path Pollutant Concentration and CO_2 or O_2 Gas Monitors

Locate the measurement path (1) totally within the inner area bounded by a line 1.0 meter from the stack or duct wall, or (2) such that at least 70.0 percent of the path is within the inner 50.0 percent of the stack or duct cross-sectional area, or (3) such that the path is centrally located within any part of the centroidal area.

1.2 Flow Monitors

* * * The EPA recommends (but does not require) performing a flow profile study following the procedures in 40 CFR part 60, appendix A, Method, 1, section 2.5 or 2.4 for each of the three operating or load levels indicated in section 6.5.2 of this appendix to determine the acceptability of the potential flow monitor location and to determine the number and location of flow sampling points required to obtain a representative flow value. * * *

1.2.1 Acceptability of Monitor Location

The installation of a flow monitor is acceptable if either (1) the location satisfies the minimum siting criteria of Method 1 in Appendix A to part 60 of this chapter (i.e., the location is greater than or equal to eight stack or duct diameters downstream and two diameters upstream from a flow disturbance; or, if necessary, two stack or duct diameters downstream and one-half stack or duct diameter upstream from a flow disturbance), or (2) the results of a flow profile study, if performed, are acceptable (i.e., there are no cyclonic (or swirling) or stratified flow conditions), and the flow monitor also satisfies the performance specifications of this part. If the flow monitor is installed in a location that does not satisfy these physical criteria, but nevertheless the monitor achieves the performance specifications of this part, then the location is acceptable, notwithstanding the requirements of this section.

1.2.2 Flow Monitor Certification Date Extension

Whenever the designated representative successfully demonstrates that modifications to the exhaust duct or stack (such as installation of straightening vanes, modifications of ductwork, and the like) are necessary for the flow monitor to meet the performance specifications, the Administrator may approve an interim alternative flow monitoring methodology and an extension to the required certification date for the flow monitor. * * *

* * * * *

52. Appendix A to part 75, section 2 is amended by revising sections 2.1.1; revising the first paragraph of section 2.1.1.1, and by revising sections 2.1.1.2, 2.1.1.4, 2.1.2, 2.1.2.1, 2.1.2.2, 2.1.2.4, 2.1.3 and 2.1.4 to read as follows:

2. Equipment Specifications

2.1 * * *

2.1.1 SO_2 Pollutant Concentration Monitors

Determine, as indicated below, the span value for an SO_2 pollutant concentration monitor so that all expected concentrations can be accurately measured and recorded.

2.1.1.1 Maximum Potential Concentration

The monitor must be capable of accurately measuring up to 125 percent of the maximum potential concentration (MPC) as calculated using Equation A–1a or A–1b. Calculate the maximum potential concentration by using Equation A–1a or A–1b and the maximum percent sulfur and minimum gross calorific value (GCV) for the highest sulfur fuel to be burned, using daily fuel sample data if they are available. If an SO_2 CEMS is already installed, the owner or operator may determine an MPC based upon the maximum concentration observed during the previous 30 unit operating days when using the type of fuel to be burned. For initial certification, base the maximum percent sulfur and minimum GCV on the results of all available fuel sampling and analysis data from the previous 12 months (where such data exists). If the unit has not been operated during that period, use the maximum sulfur content and minimum GCV from the fuel contract for fuel that will be combusted by the unit. Whenever the fuel supply changes such that these maximum sulfur and minimum GCV values may change significantly, base the maximum percent sulfur and minimum GCV on the new fuel with the highest sulfur content. Use the one of the two following methods that results in a higher MPC: (1) results of samples representative of the new fuel supply, or (2) maximum sulfur and minimum GCV from the fuel contract for fuel that will be combusted by the unit. Whenever performing fuel sampling to determine the MPC, use ASTM Methods ASTM D3177–89, ''Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke,'' ASTM D4239–85, ''Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods,'' ASTM D4294–90, ''Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy,'' ASTM D1552–90, ''Standard Test Method for Sulfur in Petroleum Products (High Temperature Method),'' ASTM D129–91, ''Standard Test Method for Sulfur in Petroleum Products (General Bomb Method),'' or ASTM D2622–92, ''Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry'' for sulfur content of solid or liquid fuels, or ASTM D3176–89, ''Standard Practice for Ultimate Analysis of Coal and Coke'', ASTM D240–87 (Reapproved 1991), ''Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter'', or ASTM D2015–91, ''Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter'' for GCV (incorporated by reference under § 75.6). Multiply the maximum potential concentration by 125 percent, and round up the resultant concentration to the nearest multiple of 100 ppm to determine the span value. The span value will be used to determine the concentrations of the calibration gases. Include the full-scale range setting and calculations of the span and MPC in the monitoring plan for the unit. Select the full-scale range of the instrument to be consistent with section 2.1 of this appendix, and to be greater than or equal to the span value. This selected monitor range with a span rounded up from 125 percent of the maximum potential concentration will be the ''high-scale'' of the SO_2 pollutant concentration monitor.

$$MPC = 11.32 \times 10^6 \left(\frac{\%S}{GCV} \right) \left(\frac{20.9 - \%O_{2w}}{20.9} \right) \qquad \text{(Eq. A–1a)}$$

or

$$MPC = 66.93 \times 10^6 \left(\frac{\%S}{GCV} \right) \left(\frac{\%CO_{2w}}{100} \right) \qquad \text{(Eq. A–1b)}$$

2.1.1.2 Maximum Expected Concentration

If the majority of SO_2 concentration values are predicted to be less than 25 percent of the full-scale range of the instrument selected under section 2.1.1.1 of this appendix, (e.g., where an SO_2 add-on emission control is used or where fuel with different sulfur contents are blended), use an additional (lower) measurement range. For this second range, use Equation A–2 to calculate the maximum expected concentration (MEC) for units with emission controls. For units blending fuels, calculate the MEC using a best estimate of the highest sulfur content and lowest gross calorific value expected for the blend and inserting these values into Equation A–1. If an SO_2 CEMS is already installed, the owner or operator may calculate an MEC based upon the maximum concentration measured by the CEMS over a thirty-day period, provided that there have been no full-scale exceedances since the range was last selected. Multiply the maximum expected concentration by 125 percent, and round up the resultant concentration to the nearest multiple of 10 ppm to determine the span value for the additional (lower) range. The span value of this additional range will also be used to determine concentrations of the calibration gases for this additional range. Report the full-scale range setting and calculations of the MEC and span in the monitoring plan for the unit. Select the full-scale range of the instrument of this additional (lower) range to be consistent with section 2.1 of this appendix, and to be greater than or equal to the lower range span value. This selected monitor range with a span rounded up from 125 percent of the MEC will be the ''low-scale'' of the SO_2 pollutant concentration monitor. Units using a low-scale range must also be capable of accurately measuring the anticipated concentrations up to and including 125 percent of the maximum potential concentration. If an existing State, local, or Federal requirement for span of an SO_2 pollutant concentration monitor requires a span other than that required in this section, but less than that required for the high-scale by this appendix, the State, local or Federal span value may be approved, where a satisfactory explanation is included in the monitoring plan.

$$MEC = MPC[(100-RE)/100] \qquad \text{(Eq. A–2)}$$

Where:

MEC=Maximum expected concentration (ppm).

MPC=Maximum potential concentration (ppm), as determined by Eq. A–1a or A–1b.

RE = Expected average design removal efficiency of control equipment (%).

2.1.1.3 * * *

2.1.1.4 Adjustment of Span

Wherever the SO_2 concentration exceeds the maximum potential concentration but does not exceed the full-scale range during more than one clock-hour and the monitor can measure and record the SO_2 concentration accurately, it may be reported for use in the Acid Rain Program. If the concentration exceeds the monitor's ability to measure and record values accurately during a clock hour, and the full-scale exceedance is not during an out-of-control period, report the full-scale value as the SO_2 concentration for that clock hour. If full-scale exceedances occur during more than one clock hour since the last adjustment of the full-scale range setting, adjust the full-scale range setting to prevent future exceedances.

Whenever the fuel supply or emission controls change such that the maximum expected or potential concentration may change significantly, adjust the span and range setting to assure the continued proper operation of the monitoring system. Determine the adjusted span using the procedures in sections 2.1.1.1 or 2.1.1.2 of this appendix. Select the full scale range of the instrument to be greater than or equal to the new span value and to be consistent with the guidelines of section 2.1 of this appendix. Record and report the new full-scale range setting, calculations of the span, MPC, and MEC (if appropriate), and the adjusted span value, in an updated monitoring plan. In addition, record and report the adjusted span as part of the records for the daily calibration error test and linearity check specified by appendix B of this part. Whenever the span value is adjusted, use calibration gas concentrations based on the most recent adjusted span value. Perform a linearity check according to section 6.2 of this appendix whenever making a change to the monitor span or range. Recertification under § 75.20(b) is required whenever a significant change in the monitor's range also requires an internal modification to the monitor (e.g., a change of measurement cell length).

2.1.2 NO_X Pollutant Concentration Monitors

Determine, as indicated below, the span value(s) for the NO_X pollutant concentration monitor so that all expected NO_X concentrations can be determined and recorded accurately including both the maximum expected and potential concentration.

2.1.2.1 Maximum Potential Concentration

The monitor must be capable of accurately measuring up to 125 percent of the maximum potential concentration (MPC) as determined below in this section. Use 800 ppm for coal-fired and 400 ppm for oil- or gas-fired units as the maximum potential concentration of NOx, unless a more representative MPC is determined by one of the following methods (If an MPC of 1600 ppm for coal-fired units or 480 ppm for oil- or gas-fired units was previously selected under this part, that value may still be used.): (1) NO_X emission test results, (2) historical CEM data over the previous 30 unit operating days; or (3) specific values based on boiler-type and fuel combusted, listed in Table 2–1 or Table 2–2 if other data under (1) or (2) were not available. Multiply the MPC by 125 percent and round up to the nearest multiple of 100 ppm to determine the span value. The span value will be used to determine the concentrations of the calibration gases.

Report the full-scale range setting, and calculations of the MPC, maximum potential NO_X emission rate, and span in the monitoring plan for the unit. Select the full-scale range of the instrument to be consistent with section 2.1 of this appendix, and to be greater than or equal to the span value. This selected monitor range with a span rounded up from 125 percent of the maximum potential concentration will be the ''high-scale'' of the NO_X pollutant concentration monitor.

If NO_X emission testing is used to determine the maximum potential NO_X concentration, use the following guidelines: Use Method 7E from appendix A of part 60 of this chapter to measure total NO_X concentration. Operate the unit, or group of units sharing a common stack, at the minimum safe and stable load, the normal load, and the maximum load. If the normal load and maximum load are identical, an intermediate level need not be tested. Operate at the highest excess O_2 level expected under normal operating conditions. Make at least three runs with three traverse points of at least 20 minutes duration at each operating condition. Select the highest NO_X concentration from all measured values as the maximum potential concentration for NOx. If historical CEM data are used to determine the MPC, the data must represent various operating conditions, including the minimum safe and stable load, normal load, and maximum load. Calculate the MPC and span using the highest hourly NO_X concentration in ppm. If no test data or historical CEM data are available, use Table 2–1 or Table 2–2 to estimate the maximum potential concentration based upon boiler type and fuel used.

TABLE 2–1.—MAXIMUM POTENTIAL CONCENTRATION FOR NO_X—Coal-Fired Units

Unit type	Maximum potential concentration for NO_X (ppm)
Tangentially-fired dry bottom and fluidized bed	460
Wall-fired dry bottom, turbo-fired dry bottom, stokers	675
Roof-fired (vertically-fired) dry bottom, cell burners, arch-fired	975
Cyclone, wall-fired wet bottom, wet bottom turbo-fired	1200
Others	As approved by the Administrator.

TABLE 2–2.—MAXIMUM POTENTIAL CONCENTRATION FOR NO_X—Gas- And Oil-Fired Units

Unit type	Maximum potential concentration for NO_X (ppm)
Tangentially-fired dry bottom	380
Wall-fired dry bottom	600
Roof-fired (vertically-fired) dry bottom, arch-fired	550
Existing combustion turbine or combined cycle turbine	200
New stationary gas turbine/combustion turbine	50
Others	As approved by the Administrator.

2.1.2.2 Maximum Expected Concentration

If the majority of NO_X concentrations are expected to be less than 25 percent of the full-scale range of the instrument selected under section 2.1.2.1 of this appendix (e.g., where a NO_X add-on emission control is used) use a ''low-scale'' measurement range. For units with add-on emission controls, determine the maximum expected concentration (MEC) of NO_X using Equation A–2, inserting the maximum potential concentration, as determined using the procedures in section 2.1.2.1 of this appendix. Where Equation A–2 is not appropriate, set the MEC, either (1) by measuring the NO_X concentration using the testing procedures in section 2.1.2.1 of this appendix, or (2) by using historical CEM data over the previous 30 unit operating days. Other methods for determining the MEC may be accepted if they are satisfactorily explained in the monitoring plan. If an existing State, local, or Federal requirement for span of an NO_X pollutant concentration monitor requires a span other than that required in this section, but less than that required for the high scale by this appendix, the State, local, or Federal span value may be approved, where a satisfactory explanation is included in the monitoring plan. Calculate the span for the additional (lower) range by multiplying the maximum expected concentration by 125 percent and by rounding up the resultant concentration to the nearest multiple of 10 ppm. The span value of this additional (lower) range will also be used to determine the concentrations of the calibration gases. Include the full-scale range setting and calculations of the MEC and span in the monitoring plan for the unit. Select the full-scale range of the instrument to be consistent with section 2.1 of this appendix, and to be greater or equal to the lower range span value. This selected monitor range with a span rounded up from 125 percent of the maximum expected concentration is the ''low-scale'' of NO_X pollutant concentration monitors. NO_X pollutant concentration monitors on affected units with NO_X emission controls, or on other units with monitors using a low-scale range, must also be capable of accurately measuring up to 125 percent of the maximum potential concentration. For dual-span NO_X pollutant concentration monitors, determine the concentration of calibration gases based on both span values.

2.1.2.3 * * *

2.1.2.4 Adjustment of Span

Wherever the actual NO_X concentration exceeds the maximum potential concentration but does not exceed the full-scale range for more than one clock-hour and the monitor can measure and record the NO_X concentration values accurately, the NO_X concentration values may be reported for use in the Acid Rain Program. If the concentration exceeds the monitor's ability to measure and record values accurately during a clock hour, and the full-scale exceedance is not during an out-of-control period, report the full-scale value as the NO_X concentration for that clock hour. If full-scale exceedances occur during more than one clock hour since the last adjustment of the full-scale range setting, adjust the full-scale range setting to prevent future exceedances.

Whenever the fuel supply, emission controls, or other process parameters change such that the maximum expected concentration or the maximum potential concentration may change significantly, adjust the NO_X pollutant concentration span and monitor range to assure the continued accuracy of the monitoring system. Determine the adjusted span value using the procedures in sections 2.1.2.1 or 2.1.2.2 of this appendix. Select the new full scale range of the instrument to be greater than or equal to the adjusted span value and to be consistent with the guidelines of section 2.1 of this appendix. Record and report the new full-scale range setting, calculations of the span value, MPC, and MEC (if appropriate), maximum potential NO_X emission rate and the adjusted span value in an updated monitoring plan for the unit. In addition, record and report the adjusted span as part of the records for the daily calibration error test and linearity check required by appendix B of this part. Whenever the span value is adjusted, use calibration gas concentrations based on the most recent adjusted span value. Perform a linearity check according to section 6.2 of this appendix whenever making a change to the monitor span or range. Recertification under § 75.20(b) is required whenever a significant change is made in the monitor's range that requires an internal modification to the monitor (e.g., a change of measurement cell length).

2.1.3 CO_2 and O_2 Monitors

Define the ''high scale'' span value as 20 percent O_2 or 20 percent CO_2. All O_2 and CO_2 analyzers must have ''high-scale'' measurement capability. Select the full-scale range of the instrument to be consistent with section 2.1 of this appendix, and to be greater than or equal to the span value. If the O_2 or CO_2 concentrations are expected to be consistently low, a ''low scale'' measurement range may be used for increased accuracy, provided that it is consistent with section 2.1 of this appendix. Include a span value for the low-scale range in the monitoring plan. Select the calibration gas concentrations as percentages of the span value.

2.1.4 Flow Monitors

Select the full-scale range of the flow monitor so that it is consistent with section 2.1 of this appendix, and can accurately measure all potential volumetric flow rates at the flow monitor installation site. For this purpose, determine the span value of the flow monitor using the following procedure. Calculate the maximum potential velocity (MPV) using Equation A–3a or A–3b or determine the MPV or maximum potential flow rate (MPF) in scfh (wet basis) from velocity traverse testing. If using test values, use the highest velocity measured at or near the maximum unit operating load. Calculate the MPV in units of wet standard fpm. Then, if necessary, convert the MPV to equivalent units of flow rate (e.g., scfh or kscfh) or differential pressure (inches of water), consistent with the measurement units used for the daily calibration error test to calculate the span value. Multiply the MPV (in equivalent units) by 125 percent, and round up the result to no less than 2 significant figures. Report the full-scale range setting, and calculations of the span value, MPV and MPF in the monitoring plan for the unit.

$$MPV = \left(\frac{F_d H_f}{A}\right)\left(\frac{20.9}{20.9 - \%O_{2d}}\right)\left[\frac{100}{100 - \%H_2O}\right] \qquad \text{(Eq. A–3a)}$$

or

$$MPV = \left(\frac{F_d H_f}{A}\right)\left(\frac{100}{\%CO_{2d}}\right)\left[\frac{100}{100 - \%H_2O}\right] \qquad \text{(Eq. A–3b)}$$

Where:

MPV=maximum potential velocity (fpm, standard wet basis),

Fd=dry-basis F factor (dscf/mmBtu) from Table 1, Appendix F of this part,

Fc=carbon-based F factor (scfCO2/mmBtu) from Table 1, Appendix F of this part,

Hf=maximum heat input (mmBtu/minute) for all units, combined, exhausting to the stack or duct where the flow monitor is located,

A=inside cross sectional area (ft2) of the flue at the flow monitor location,

%O2d=maximum oxygen concentration, percent dry basis, under normal operating conditions,

%CO2d=minimum carbon dioxide concentration, percent dry basis, under normal operating conditions,

$\%H_2O$ = maximum percent flue gas moisture content under normal operating conditions.

If the volumetric flow rate exceeds the maximum potential flow calculated from the maximum potential velocity but does not exceed the full scale range during more than one clock hour and the flow monitor can accurately measure and record values, the flow rate may be reported for use in the Acid Rain Program. If the volumetric flow rate exceeds the monitor's ability to measure and record values accurately during a clock hour, and the full-scale exceedance is not during an out-of-control period, report the full-scale value as the flow rate for that clock hour. If full-scale exceedance occurs during more than one hour since the last adjustment of the full-scale range setting, adjust the full-scale range setting to prevent future exceedances. If the fuel supply, process parameters or other conditions change such that the maximum potential velocity may change significantly, adjust the range to assure the continued accuracy of the flow monitor. Calculate an adjusted span using the procedures in this section. Select the full-scale range of the instrument to be greater than or equal to the adjusted span value. Record and report the new full-scale range setting, calculations of the span value, MPV, and MPF, and the adjusted span value in an updated monitoring plan for the unit. Record and report the adjusted span and reference values as parts of the records for the calibration error test required by appendix B of this part. Whenever the span value is adjusted, use reference values for the calibration error test based on the most recent adjusted span value.

Perform a calibration error test according to section 2.1.2 of this appendix whenever making a change to the flow monitor span or range. Recertification under § 75.20(b) is required whenever making a significant change in the flow monitor's range that requires an internal modification to the monitor.

* * * * *

53. Appendix A to part 75, section 3 is amended by revising sections 3.3.3 and 3.5 to read as follows:

3. Performance Specifications

* * * * *

3.3 * * *

3.3.1 * * *

3.3.2 * * *

3.3.3 Relative Accuracy for CO_2 and O_2 Pollutant Concentration Monitors

The relative accuracy for CO_2 and O_2 monitors shall not exceed 10.0 percent. The relative accuracy test results are also acceptable if the mean difference of the CO_2 or O_2 monitor measurements and the corresponding reference method measurement, calculated using Equation A–7 of this appendix, is within 1.0 percent CO_2 or O_2.

* * * * *

3.5 Cycle Time

The cycle time for pollutant concentration monitors, and continuous emission monitoring systems shall not exceed 15 min.

* * * * *

54. Appendix A to part 75, section 4 is amended by adding a third paragraph to read as follows:

4. Data Acquisition and Handling Systems

* * * * *

For an excepted monitoring system under appendix D or E of this part, data acquisition and handling systems shall:

(1) Read and record the full range of fuel flowrate through the upper range value;

(2) Calculate and record intermediate values necessary to obtain emissions, such as mass fuel flowrate and heat input rate;

(3) Calculate and record emissions in units of the standard (lb/hr of SO_2, lb/mmBtu of NO_X);

(4) Predict and record NO_X emission rate using the heat input rate and the NO_X/heat input correlation developed under appendix E of this part;

(5) Calculate and record all missing data substitution values specified in appendix D or E of this part; and

(6) Provide a continuous, permanent record of all measurements and required information as an ASCII flat file capable of transmission via an IBM-compatible personal computer diskette or other electronic media.

* * * * *

55. Appendix A to part 75, section 5 is amended by revising section 5.1.2 and by adding sections 5.1.4, 5.1.5, and 5.1.6 to read as follows:

5. Calibration Gas

5.1 Reference Gases

5.1.1 * * *

5.1.2 NIST Traceable Reference Materials

Contact the Quality Assurance Division (MD 77), Environmental Monitoring System Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711 or the Organic Analytical Research Division of NIST at the above address for Standard Reference Materials for a list of vendors and cylinder gases.

5.1.3 * * *

5.1.4 Research Gas Mixtures

Contact the Quality Assurance Division (MD 77), Environmental Monitoring System Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711 or the Organic Analytical Research Division of NIST at the above address for Standard Reference Materials for a list of vendors and cylinder gases.

5.1.5 Zero Air Material

Use zero air material for calibrating at zero-level concentrations only. Zero air material shall be certified by the gas vendor or instrument manufacturer or vendor not to contain concentrations of SO_2 or NO_X above 0.1 ppm or CO_2 above 400 ppm, and not to contain concentrations of other gases that will interfere with instrument readings or cause the instrument to read concentrations of SO_2, NO_X, or CO_2.

5.1.6 NIST/EPA-approved Certified Reference Materials

Existing certified reference materials as previously certified under EPA's former certified reference material program may be used for the remainder of the cylinder's shelf life.

* * * * *

56. Appendix A to part 75, section 6 is amended by adding a sentence to the end of section 6.1; by revising the first sentence in the second paragraph of section 6.2; and by revising sections 6.5, 6.5.1, 6.5.2, 6.5.5, 6.5.6, 6.5.7, and 6.5.10 to read as follows:

6. Certification Tests and Procedures

6.1 Pretest Preparation

* * * To the extent practicable, test the DAHS software prior to testing the monitoring hardware.

6.2 Linearity Check

* * * * *

Challenge each pollutant concentration or CO_2 or O_2 monitor with NIST/EPA-approved certified reference material, NIST traceable reference material, standard reference material, or Protocol 1 calibration gases certified to be within 2 percent of the concentration specified on the label at the low-, mid-, or high-level concentrations specified in section 5.2 of this appendix. * * *

* * * * *

6.5 Relative Accuracy and Bias Tests

Perform relative accuracy test audits for each CO_2 and SO_2 pollutant concentration monitor, each O_2 monitor used to calculate heat input or CO_2 concentration, each SO_2-diluent continuous emission monitoring system (lb/mmBtu) used by units with a qualifying Phase I technology for the period during which the units are required to monitor SO_2 emission removal efficiency, from January 1, 1997 through December 31, 1999, flow monitor, and NO_X continuous emission monitoring system. For monitors or monitoring systems with dual ranges, perform the relative accuracy test on one range measuring emissions in the stack at the time of testing. Record monitor or monitoring system output from the data acquisition and handling system. Perform concurrent relative accuracy test audits for each SO_2 pollutant concentration monitor and flow monitor, at least once a year (see section 2.3.1 of appendix B of this part), during the flow monitor test at the normal operating level specified in section 6.5.2 of this appendix. Concurrent relative accuracy test audits may be performed by conducting simultaneous SO_2 and flow relative accuracy test audit runs, or by alternating an SO_2 relative accuracy test audit run with a flow relative accuracy test audit run until all relative accuracy test audit runs are completed. Where two or more probes are in the same proximity, care should be taken to prevent probes from interfering with each other's sampling. For each SO_2 pollutant concentration monitor, each flow monitor, and each NO_X continuous emission monitoring system, calculate bias, as well as relative accuracy, with data from the relative accuracy test audits.

Complete each relative accuracy test audit within a 7-day period while the unit (or units, if more than one unit exhausts into the flue) is combusting the fuel that is normal for that unit. When relative accuracy test audits are performed on continuous emission monitoring systems or component(s) on bypass stacks/ducts, use the fuel normally combusted by the unit (or units, if more than one unit exhausts into the flue) when emissions exhaust through the bypass stack/ducts. Do not perform corrective maintenance, repairs, replacements or adjustments during the relative accuracy test audit other than as required in the operation and maintenance manual.

6.5.1 SO_2, O_2 and CO_2 Pollutant Concentration Monitors and SO_2-Diluent and NO_X Continuous Emission Monitoring Systems

Perform relative accuracy test audits for each SO_2, O_2 or CO_2 pollutant concentration monitor or NO_X continuous emission monitoring system or SO_2-diluent continuous emission monitoring system (lb/mmBtu) used by units with a qualifying Phase I technology for the period during which the units are required to monitor SO_2 emission removal efficiency, from January 1, 1997 through December 31, 1999, at a normal operating level for the unit (or combined units, if common stack).

6.5.2 Flow Monitors

Except for flow monitors on bypass stacks/ducts and peaking units, perform relative accuracy test audits for each flow monitor at three different exhaust gas velocities, expressed in terms of percent of flow monitor span, or different operating or load levels. For a common stack/duct, the three different exhaust gas velocities may be obtained from frequently used unit/load combinations for units exhausting to the common stack. Select the operating levels as follows: (1) A frequently used low operating level selected within the range between the minimum safe and stable operating level and 50 percent load, (2) a frequently used high operating level selected within the range between 80 percent of the maximum operating level and the maximum operating level, and (3) the normal operating level. If the normal operating level is within 10.0 percent of the maximum operating level of either (1) or (2) above, use a level that is evenly spaced between the low and high operating levels used. The maximum operating level shall be equal to the nameplate capacity less any physical or regulatory limitations or other deratings. Calculate flow monitor relative accuracy at each of the three operating levels. If a flow monitor fails the relative accuracy test on any of the three levels of a three-level relative accuracy test audit, the three-level relative accuracy test audit must be repeated. For flow monitors on bypass stacks/ducts and peaking units, the flow monitor relative accuracy test audit is required only at the normal operating level.

6.5.3 * * *

6.5.4 * * *

6.5.5 Reference Method Measurement Location

Select a location for reference method measurements that is (1) accessible; (2) in the same proximity as the monitor or monitoring system location; and (3) meets the requirements of Performance Specification 2 in appendix B of part 60 of this chapter for SO_2 and NO_X continuous emission monitoring systems, Performance Specification 3 in appendix B of part 60 of this chapter for CO_2 or O_2 monitors, or Method 1 (or 1A) in appendix A of part 60 of this chapter for volumetric flow, except as otherwise indicated in this section or as approved by the Administrator.

6.5.6 Reference Method Traverse Point Selection

Select traverse points that (1) ensure acquisition of representative samples of pollutant and diluent concentrations, moisture content, temperature, and flue gas flow rate over the flue cross section; and (2) meet the requirements of Performance Specification 2 in appendix B of part 60 of this chapter (for SO_2 and NO_X), Performance Specification 3 in appendix B of part 60 of this chapter (for O_2 and CO_2), Method 1 (or 1A) (for volumetric flow), Method 3 (for molecular weight), and Method 4 (for moisture determination) in appendix A of part 60 of this chapter.

6.5.7 Sampling Strategy

Conduct the reference method tests so they will yield results representative of the pollutant concentration, emission rate, moisture, temperature, and flue gas flow rate from the unit and can be correlated with the pollutant concentration monitor, CO_2 or O_2 monitor, flow monitor, and SO_2 or NO_X continuous emission monitoring system measurements. Conduct the diluent (O_2 or CO_2) measurements and any moisture measurements that may be needed simultaneously with the pollutant concentration and flue gas flow rate measurements. If an O_2 monitor is used as a CO_2 continuous emission monitoring system, but not as a diluent monitor, measure CO_2 with the reference method. To properly correlate individual SO_2 and CO_2 pollutant concentration monitor data, O_2 monitor data, SO_2 or NO_X continuous emission monitoring system data (in lb/mmBtu), and volumetric flow rate data with the reference method data, mark the beginning and end of each reference method test run (including the exact time of day) on the individual chart recorder(s) or other permanent recording device(s).

6.5.8 * * *

6.5.9 * * *

6.5.10 Reference Methods

The following methods from appendix A to part 60 of this chapter or their approved alternatives are the reference methods for performing relative accuracy test audits: Method 1 or 1A for siting; Method 2 (or 2A, 2C, or 2D) for velocity; Methods 3, 3A, or 3B for O_2 or CO_2; Method 4 for moisture;

Methods 6, 6A, or 6C for SO_2; Methods 7, 7A, 7C, 7D, 7E for NO_X, excluding the exception in section 5.1.2 of Method 7E. When using Method 7E for measuring NO_X concentration, total NO_X, both NO and NO_2, must be measured.

* * * * *

58. Appendix A to part 75, section 7 is amended by revising section 7.2.2; by revising the section heading for section 7.3; and by revising sections 7.6.4 and 7.6.5 to read as follows:

7. Calculations

* * * * *

7.2.2 Flow Monitor Calibration Error

For each reference value, calculate the percentage calibration error based upon span using the following equation:

$$CE = \frac{|R-A|}{S} \times 100 \qquad \text{(Eq. A–6)}$$

where:

CE=Calibration error;
R=Low or high level reference value specified in section 2.2.2.1 of this appendix;
A=Actual flow monitor response to the reference value; and
S=Flow monitor span or equivalent reference value (e.g., pressure pulse or electronic signal).

7.3 Relative Accuracy for SO_2 and CO_2 Pollutant Concentration Monitors, SO_2-Diluent Continuous Emission Monitoring Systems, and Flow Monitors

* * * * *

7.6.4 Bias Test

If the mean difference, d , is greater than the absolute value of the confidence coefficient, |cc|, the monitor or monitoring system has failed to meet the bias test requirement. For flow monitor bias tests, if the mean difference, d, is greater than |cc| at the operating level closest to normal operating level during the 3-level RATA, the monitor has failed to meet the bias test requirement. For flow monitors, apply the bias test at the operating level closest to normal operating level during the 3-level RATA.

7.6.5 Bias Adjustment

If the monitor or monitoring system fails to meet the bias test requirement, adjust the value obtained from the monitor using the following equation:

$$CEM_i^{Adjusted} = CEM_i^{Monitor} \times BAF \qquad \text{(Eq. A–11)}$$

Where:

CEM_i ^{Adjusted}=Data (measurement) provided by the monitor at time i.
CEM_i ^{Monitor}=Data value, adjusted for bias, at time i.
BAF=Bias adjustment factor, defined by

$$BAF = 1 + \frac{|\bar{d}|}{\overline{CEM}} \qquad \text{(Eq. A–12)}$$

Where:

BAF=Bias adjustment factor, calculated to the nearest thousandth.
d=Arithmetic mean of the difference obtained during the failed bias test using Equation A–7.
CEM=Mean of the data values provided by the monitor during the failed bias test.

If the bias test is failed by a flow monitor at the operating level closest to normal on a 3-level relative accuracy test audit, calculate the bias adjustment factor for each of the three operating levels. Apply the largest of the three bias adjustment factors to subsequent flow monitor data using Equation A–11.

Apply this adjustment prospectively to all monitor or monitoring system data from the date and time of the failed bias test until the date and time of a relative accuracy test audit that does not show bias. Use the adjusted values in computing substitution values in the missing data procedure, as specified in subpart D of this part, and in reporting the concentration of SO_2, the flow rate, and the average NO_X emission rate and calculated mass emissions of SO_2 and CO_2 during the quarter and calendar year, as specified in subpart G of this part.

* * * * *

APPENDIX B TO PART 75—QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

59. Appendix B to part 75, section 2 is amended by revising sections 2.1.4, 2.2, 2.2.1, 2.2.2, 2.3, 2.3.1, and 2.3.2; and by amending Figure 2 at the end of the appendix to read as follows:

* * * * *

2. Frequency of Testing

2.1 Daily Assessments * * *

2.1.1 * * *

2.1.2 * * *

2.1.3 * * *

2.1.4 Recalibration

The EPA recommends adjusting the calibration, at a minimum, whenever the daily calibration error exceeds the limits of the applicable performance specification for the pollutant concentration monitor, CO_2, or O_2 monitor, or flow monitor in appendix A of this part.

* * * * *

2.2 Quarterly Assessments

For each monitor or continuous emission monitoring system, perform the following assessments during each unit operating quarter, or for monitors or monitoring systems on bypass ducts or bypass stacks, during each bypass operating quarter to be performed not less than once every 2 calendar years. This requirement is effective as of the calendar quarter following the calendar quarter in which the monitor or continuous emission monitoring system is provisionally certified.

2.2.1 Linearity Check

Perform a linearity check for each SO_2 and NO_X pollutant concentration monitor and each CO_2 or O_2 monitor at least once during each unit operating quarter or each bypass operating quarter, in accordance with the procedures in appendix A, section 6.2 of this part. For units using emission controls and other units using a low-scale span value to determine calibration gases, perform a linearity check on both the low- and high-scales. Conduct the linearity checks no less than 2 months apart, to the extent practicable.

2.2.2 Leak Check

For differential pressure flow monitors, perform a leak check of all sample lines (a manual check is acceptable) at least once during each unit operating quarter or each bypass operating quarter. Conduct the leak checks no less than 2 months apart, to the extent practicable.

2.2.3 * * *

2.3 Semiannual and Annual Assessments

For each monitor or continuous emission monitoring system, perform the following assessments once semiannually (within two calendar quarters) or once annually (within four calendar quarters) after the calendar quarter in which the monitor or monitoring system was last tested, as specified below for the type of test and the performance achieved, except as provided below in section 2.3.1 of this appendix for monitors or continuous emission monitoring systems on bypass ducts or stacks or on peaking units. This requirement is effective as of the calendar quarter, unit operating quarter (for peaking units), or bypass operating quarter (for bypass stacks or ducts) following the calendar quarter in which the monitor or continuous emission monitoring system is provisionally certified. A summary chart showing the frequency with which a relative accuracy test audit must be performed, depending on the accuracy achieved, is located at the end of this appendix in Figure 2.

2.3.1 Relative Accuracy Test Audit

Perform relative accuracy test audits semiannually and, to the extent practicable, no less than 4 months apart for each SO_2 or CO_2 pollutant concentration monitor, flow monitor, NO_X continuous emission monitoring system, or SO_2-diluent continuous emission monitoring systems used by units with a Phase I qualifying technology for the period during which the units are required to monitor SO_2 emission removal efficiency, from January 1, 1997 through December 31, 1999, except as provided for monitors or continuous emission monitoring systems on peaking units or bypass stacks or ducts. For monitors on bypass stacks/ducts, perform relative accuracy test audits no less than once every two successive bypass operating quarters, or once every two calendar years, whichever occurs first, in accordance with the procedures in section 6.5 of Appendix A of this part. For monitors on peaking units, perform relative accuracy test audits no less than once every two successive unit operating quarters, or once every two calendar years, whichever occurs first. Audits required under this section shall be performed no less than 4 months apart, to the extent practicable. The audit frequency may be reduced, as specified below for monitors or monitoring systems which qualify for less frequent testing.

For flow monitors, one-level and three-level relative accuracy test audits shall be performed alternately (when a flow RATA is conducted semiannually), such that the three-level relative accuracy test audit is performed at least once annually. The three-level audit shall be performed at the three different operating or load levels specified in appendix A, section 6.5.2 of this part, and the one-level audit shall be performed at the normal operating or load level. Notwithstanding that requirement, relative accuracy test audits need only be performed at the normal operating or load level for monitors and continuous emission monitoring systems on peaking units and bypass stacks/ducts.

Relative accuracy test audits may be performed on an annual basis rather than on a semiannual basis (or for monitors on peaking units and bypass ducts or bypass stacks, no less than (1) once every four successive unit or bypass operating quarters, or (2) every two calendar years, whichever occurs first) under any of the following conditions: (1) The relative accuracy during the previous audit for an SO_2 or CO_2 pollutant concentration monitor (including an O_2 pollutant monitor used to measure CO_2 using the procedures in appendix F of this part), or for a NO_X or SO_2-diluent continuous emissions monitoring system is 7.5 percent or less; (2) prior to January 1, 2000, the relative accuracy during the previous audit for a flow monitor is 10.0 percent or less at each operating level tested; (3) on and after January 1, 2000, the relative accuracy during the previous audit for a flow monitor is 7.5 percent or less at each operating level tested; (4) on low flow (≤10.0 fps) stacks/ducts, when the monitor mean, calculated using Equation A–7 in appendix A of this part is within ±1.5 fps of the reference method mean or achieves a relative accuracy of 7.5 percent (10 percent if prior to January 1, 2000) or less during the previous audit; (5) on low SO_2 emitting units (SO_2 concentrations ≤250.0 ppm, or equivalent lb/mmBtu value for SO_2-diluent continuous emission monitoring systems), when the monitor mean is within ±8.0 ppm (or equivalent in lb/mmBtu for SO_2-diluent continuous emission monitoring systems) of the reference method mean or achieves a relative accuracy of 7.5 percent or less during the previous audit; or (6) on low NO_X emitting units (NO_X emission rate ≤0.20 lb/mmBtu), when the NO_X continuous emission monitoring system achieves a relative accuracy of 7.5 percent or less or when the monitoring system mean, calculated using Equation A–7 in appendix A of this part is within ±0.01 lb/mmBtu of the reference method mean.

A maximum of two relative accuracy test audit trials may be performed for the purpose of achieving the results required to qualify for less frequent relative accuracy test audits. Whenever two trials are performed, the results of the second (later) trial must be used in calculating both the relative accuracy and bias.

2.3.2 Out-of-Control Period

An out-of-control period occurs under any of the following conditions: (1) The relative accuracy of an SO_2, CO_2, or O_2 pollutant concentration monitor or a NO_X or SO_2-diluent continuous emission monitoring system exceeds 10.0 percent; (2) prior to January 1, 2000, the relative accuracy of a flow monitor exceeds 15.0 percent; (3) on and after January 1, 2000, the relative accuracy of a flow monitor exceeds 10.0 percent; (4) for low flow situations (≤10.0 fps), the flow monitor mean value (if applicable) exceeds ±2.0 fps of the reference method mean whenever the relative accuracy is greater than 15.0 percent for Phase I or 10 percent for Phase II; (5) for low SO_2 emitter situations, the monitor mean values exceeds ±15.0 ppm (or ± 0.03 lb/mmBtu for SO_2-diluent continuous emission monitoring systems from January 1, 1997 through December 31, 1999) of the reference method mean whenever the relative accuracy is greater than 10.0 percent; or (6) for low NO_X emitting units (NO_X emission rate ≤0.2 lb/mmBtu), the NO_X continuous emission monitoring system mean values exceed ±0.02 lb/mmBtu of the reference method mean whenever the relative accuracy is greater than 10.0 percent. For SO_2, CO_2, O_2, NO_X emission rate, and flow relative accuracy test audits performed at only one level, the out-of-control period begins with the hour of completion of the failed relative accuracy test audit and ends with the hour of completion of a satisfactory relative accuracy test audit. For a flow relative accuracy test audit at 3 operating levels, the out-of-control period begins with the hour of completion of the first failed relative accuracy test audit at any of the three operating levels, and ends with the hour of completion of a satisfactory three-level relative accuracy test audit.

Failure of the bias test does not result in the system or monitor being out-of-control.

* * * * *

FIGURE 2.—RELATIVE ACCURACY TEST FREQUENCY INCENTIVE SYSTEM

RATA	Semiannually[1] (percent)	Annual[1]
SO_2	RA ≤ 10	RA ≤ 7.5% or ±8.0 ppm.[2]
NO_X	RA ≤ 10	RA ≤ 7.5% or ±0.01 lb/mmBtu.[2]
Flow (Phase I)[3]	RA ≤ 15	RA ≤ 10% or ± 1.5 fps.[2]
Flow (Phase II)[3]	RA ≤ 10	RA ≤ 7.5% or ± 1.5 fps.[2]
CO_2/O_2	RA ≤ 10	RA ≤ 7.5%.

[1] For monitors on bypass stack/duct, bypass operating quarters, not to exceed two calendar years. For monitors on peaking units, unit operating quarters, not to exceed two calendar years.
[2] The difference between monitor and reference method mean values; low emitters or low flow, only.
[3] Conduct 3-load RATAs annually, if requirements to qualify for less frequent testing are met.

Appendix C to Part 75—Missing Data Estimation Procedures

60. Appendix C to part 75, section 1 is amended by revising the section heading and the first paragraph of section 1.2 and by revising the first paragraph of section 1.3 to read as follows:

1. Parametric Monitoring Procedure for Missing SO_2 Concentration or NO_X Emission Rate Data

* * * * *

1.2 Petition Requirements

Continuously monitor, determine, and record hourly averages of the estimated SO_2 or NO_X removal efficiency and of the parameters specified below, at a minimum. The affected facility shall supply additional parametric information where appropriate. Measure the SO_2 concentration or NO_X emission rate, removal efficiency of the add-on emission controls, and the parameters for at least 2160 unit operating hours. Provide information for all expected operating conditions and removal efficiencies. At least 4 evenly spaced data points are required for a valid hourly average, except during periods of calibration, maintenance, or quality assurance activities, during which 2 data points per hour are sufficient. The

Administrator will review all applications on a case-by-case basis.

* * * * *

1.3 Correlation of Emissions With Parameters

Establish a method for correlating hourly averages of the parameters identified above with the percent removal efficiency of the SO_2 or post-combustion NO_X emission controls under varying unit operating loads. Equations 1–7 in § 75.15 may be used to estimate the percent removal efficiency of the SO_2 emission controls on an hourly basis.

* * * * *

61. Appendix C to part 75, section 2 is amended by revising section 2.2.1, Table C–1, and sections 2.2.3, 2.2.3.1, 2.2.3.5, and 2.2.5 to read as follows:

* * * * *

2. Procedure

2.2.1 For a single unit, establish 10 operating load ranges defined in terms of percent of the maximum hourly gross load of the unit, in gross megawatts (MWge), as shown in Table C–1. For units sharing a common stack monitored with a single flow monitor, the load ranges for flow (but not for NO_X) may be broken down into 20 equally-sized operating load ranges in increments of 5 percent of the combined maximum hourly gross load of all units utilizing the common stack. For a cogenerating unit or other unit at which some portion of the heat input is not used to produce electricity or for a unit for which hourly gross load in MWge is not recorded separately, use the hourly gross steam load of the unit, in pounds of steam per hour at the measured temperature (°F) and pressure (psia) instead of MWge. Indicate a change in the number of load ranges or the units of loads to be used in the precertification section of the monitoring plan.

TABLE C–1.—DEFINITION OF OPERATING LOAD RANGES FOR LOAD-BASED SUBSTITUTION DATA PROCEDURES

Operating load range	Percent of maximum hourly gross load (%)
1	0–10
2	10–20
3	20–30
4	30–40
5	40–50
6	50–60
7	60–70
8	70–80
9	80–90
10	90–100

2.2.2 * * *

2.2.3 Beginning with the first hour of unit operation after installation and certification of the flow monitor or the NO_X continuous emission monitoring system and continuing thereafter, the data acquisition and handling system must be capable of calculating and recording the following information for each unit operating hour of missing flow or NO_X data within each identified load range during the shorter of: (1) the previous 2,160 quality assured monitor operating hours (on a rolling basis), or (2) all previous quality assured monitor operating hours.

2.2.3.1 Average of the hourly flow rates reported by a flow monitor, in scfh.

2.2.3.2 * * *

2.2.3.3 * * *

2.2.3.4 * * *

2.2.3.5 Average of the hourly NO_X emission rate, in lb/mmBtu, reported by a NO_X continuous emission monitoring system.

2.2.3.6 * * *

2.2.3.7 * * *

2.2.3.8 * * *

2.2.4 * * *

2.2.5 When a bias adjustment is necessary for the flow monitor and/or the NO_X continuous emission monitoring system, apply the adjustment factor to all monitor or continuous emission monitoring system data values placed in the load ranges.

2.2.6 * * *

Appendix D to Part 75—Optional SO_2 Emissions Data Protocol for Gas-Fired and Oil-Fired Units

62. Appendix D to part 75, section 1 is amended by revising section 1.1; by removing section 1.2 and revising and redesignating section 1.3 as section 1.2; and by removing section 1.4 to read as follows:

1. Applicability

1.1 This protocol may be used in lieu of continuous SO_2 pollutant concentration and flow monitors for the purpose of determining hourly SO_2 emissions and heat input from: (1) gas-fired units as defined in § 72.2 of this chapter; or (2) oil-fired units as defined in § 72.2 of this chapter. This optional SO_2 emissions data protocol contains procedures for conducting oil sampling and analysis in section 2.2 of this appendix; the procedures for flow proportional oil sampling and the procedures for manual daily oil sampling may be used for any gas-fired unit or oil-fired unit. In addition, this optional SO_2 emissions data protocol contains two procedures for determining SO_2 emissions due to the combustion of gaseous fuels; these two procedures may be used for any gas-fired unit or oil-fired unit.

1.2 Pursuant to the procedures in § 75.20, complete all testing requirements to certify use of this protocol in lieu of a flow monitor and an SO_2 continuous emission monitoring system. Complete all testing requirements no later than the applicable deadline specified in § 75.4. Apply to the Administrator for initial certification to use this protocol no later than 45 days after the completion of all certification tests. Whenever the monitoring method is to be changed, reapply to the Administrator for recertification of the new monitoring method.

63. Appendix D to part 75, section 2 is revised to read as follows:

2. Procedure

2.1 Flowmeter Measurements

For each hour when the unit is combusting fuel, measure and record the flow of fuel combusted by the unit, except as provided for gas in section 2.1.4 of this appendix. Measure the flow of fuel with an in-line fuel flowmeter and automatically record the data with a data acquisition and handling system, except as provided in section 2.1.4 of this appendix.

2.1.1 Measure the flow of each fuel entering and being combusted by the unit. If a portion of the flow is diverted from the unit without being burned, and that diversion occurs downstream of the fuel flowmeter, an additional in-line fuel flowmeter is required to account for the unburned fuel. Record the flow of each fuel combusted by the unit as the difference between the flow measured in the pipe leading to the unit and the flow in the pipe diverting fuel away from the unit.

2.1.2 Install and use fuel flowmeters meeting the requirements of this appendix in a pipe going to each unit, or install and use a fuel flowmeter in a common pipe header (i.e., a pipe carrying fuel for multiple units). If the flowmeter is installed in a common pipe header, do one of the following:

2.1.2.1 Measure the fuel flow in the common pipe and combine SO_2 mass emissions for the affected units for recordkeeping and compliance purposes; or

2.1.2.2 Provide information satisfactory to the Administrator on methods for apportioning SO_2 mass emissions and heat input to each of the affected units demonstrating that the method ensures complete and accurate accounting of all emissions regulated under this part. The information shall be provided to the Administrator through a petition submitted by the designated representative under § 75.66. Satisfactory information includes apportionment using fuel flow measurements, the ratio of load (in MWe) in each unit to the total load for all units receiving fuel from the common pipe header, or the ratio of steam flow (in 1000 lb/hr) at each unit to the total steam flow for all units receiving fuel from the common pipe header.

2.1.3 For a gas-fired unit or an oil-fired unit that continuously or frequently combusts a supplemental fuel for flame stabilization or safety purposes, measure the flow of the supplemental fuel with a fuel flowmeter meeting the requirements of this appendix.

2.1.4 For an oil-fired unit that uses gas solely for start-up or burner ignition or a gas-fired unit that uses oil solely for start-up or burner ignition a flowmeter for the start-up fuel is not required. Estimate the volume of oil combusted for each start-up or ignition, either by using a fuel flowmeter or by using the dimensions of the storage container and measuring the depth of the fuel in the storage container before and after each start-up or ignition. A fuel flowmeter used solely for start-up or ignition fuel is not subject to the calibration requirements of section 2.1.5 and 2.1.6 of this appendix. Gas combusted solely for start-up or burner ignition does not need to be measured separately.

2.1.5 Each fuel flowmeter used to meet the requirements of this protocol shall meet a flowmeter accuracy of ±2.0 percent of the upper range value (i.e, maximum calibrated fuel flow rate), either by design or as calibrated and as measured under laboratory conditions by the manufacturer, by an independent laboratory, or by the owner or operator. The flowmeter accuracy must include all error from all parts of the fuel flowmeter being calibrated based upon the contribution to the error in the flowrate.

2.1.5.1 Use the procedures in the following standards for flowmeter calibration or flowmeter design, as appropriate to the type of flowmeter: ASME MFC–3M–1989 with September 1990 Errata (''Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi''), ASME MFC–4M–1986 (Reaffirmed 1990), ''Measurement of Gas Flow by Turbine Meters,'' American Gas Association Report No. 3, ''Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids Part 1: General Equations and Uncertainty Guidelines'' (October 1990 Edition), Part 2: ''Specification and Installation Requirements'' (February 1991 Edition) and Part 3: ''Natural Gas Applications'' (August 1992 edition), (excluding the modified flow-calculation method in Part 3) ASME MFC–5M–1985 (''Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters''), ASME MFC–6M–1987 with June 1987 Errata (''Measurement of Fluid Flow in Pipes Using Vortex Flow Meters''), ASME MFC–7M–1987 (Reaffirmed 1992), ''Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles,'' ISO 8316: 1987(E) ''Measurement of Liquid Flow in Closed Conduits—Method by Collection of the Liquid in a Volumetric Tank,'' or MFC–9M–1988 with December 1989 Errata (''Measurement of Liquid Flow in Closed Conduits by Weighing Method'') for all other flow meter types (incorporated by reference under § 75.6 of this part). The Administrator may also approve other procedures that use equipment traceable to National Institute of Standards and Technology (NIST) standards. Document other procedures, the equipment used, and the accuracy of the procedures in the monitoring plan for the unit and a petition submitted by the designated representative under § 75.66(c). If the flowmeter accuracy exceeds ±2.0 percent of the upper range value, the flowmeter does not qualify for use under this part.

2.1.5.2 Alternatively, a fuel flowmeter used for the purposes of this part may be calibrated or recalibrated at least annually (or, for fuel flowmeters measuring emergency fuel, bypass fuel or fuel usage of peaking units, every four calendar quarters when the unit combusts the fuel measured by the fuel flowmeter) by comparing the measured flow of a flowmeter to the measured flow from another flowmeter which has been calibrated or recalibrated during the previous 365 days using a standard listed in section 2.1.5 of this appendix or other procedure approved by the Administrator under § 75.66. Any secondary elements, such as pressure and temperature transmitters, must be calibrated immediately prior to the comparison. Perform the comparison over a period of no more than seven consecutive unit operating days. Compare the average of three fuel flow readings for each meter at each of three different flow levels, corresponding to (1) normal full operating load, (2) normal minimum operating load, and (3) a load point approximately equally spaced between the full and minimum operating loads. Calculate the flowmeter accuracy at each of the three flow levels using the following equation:

$$ACC = \frac{|R-A|}{URV} \times 100 \qquad \text{(Eq. D–1)}$$

Where:

ACC=Flow meter accuracy as a percentage of the upper range value, including all error from all parts of both flowmeters.

R=Average of the three flow measurements of the reference flow meter.

A=Average of the three measurements of the flow meter being tested.

URV=Upper range value of fuel flow meter being tested (i.e. maximum measurable flow).

If the flow meter accuracy exceeds ±2.0 percent of the upper range value at any of the three flow levels, either recalibrate the flow meter until the accuracy is within the performance specification, or replace the flow meter with another one that is within the performance specification. Notwithstanding the requirement for annual calibration of the reference flowmeter, if a reference flowmeter and the flowmeter being tested are within ±1.0 percent of the flowrate of each other during all in-place calibrations in a calendar year, then the reference flowmeter does not need to be calibrated before the next in-place calibration. This exception to calibration requirements for the reference flowmeter may be extended for periods up to five calendar years.

2.1.6 Quality Assurance

2.1.6.1 Recalibrate each fuel flowmeter to a flowmeter accuracy of ±2.0 percent of the upper range value prior to use under this part at least annually (or, for fuel flowmeters measuring emergency fuel, bypass fuel or fuel usage of peaking units, every four calendar quarters when the unit combusts the fuel measured by the fuel flowmeter), or more frequently if required by manufacturer specifications. Perform the recalibration using the procedures in section 2.1.5 of this appendix. For orifice-, nozzle-, and venturi-type flowmeters, also recalibrate the flowmeter the following calendar quarter using the procedures in section 2.1.6.2 of this appendix, whenever the fuel flowmeter accuracy during a calibration or test is greater than ±1.0 percent of the upper range value, or whenever a visual inspection of the orifice, nozzle, or venturi identifies corrosion since the previous visual inspection.

2.1.6.2 For orifice-, nozzle-, and venturi-type flowmeters that are designed according to the standards in section 2.1.5 of this appendix, satisfy the calibration requirements of this appendix by calibrating the differential pressure transmitter or transducer, static pressure transmitter or transducer, and temperature transmitter or transducer, as applicable, using equipment that has a current certificate of traceability to NIST standards. In addition, conduct a visual inspection of the orifice, nozzle, or venturi at least annually.

2.2 Oil Sampling and Analysis

Perform sampling and analysis of as-fired oil to determine the percentage of sulfur by weight in the oil.

2.2.1 When combusting diesel fuel, sample the diesel fuel either (1) every day the unit combusts diesel fuel, or (2) upon receipt of a shipment of diesel fuel.

2.2.1.1 If the diesel fuel is sampled every day, use either the flow proportional method described in section 2.2.3 of this appendix or the daily manual method described in section 2.2.4 of this appendix.

2.2.1.2 If the diesel fuel is sampled upon delivery, calculate SO_2 emissions using the highest sulfur content of any oil supply combusted in the previous 30 days that the unit combusted oil. Diesel fuel sampling and analysis may be performed either by the owner or operator of an affected unit, an outside laboratory, or a fuel supplier, provided that sampling is performed according to ASTM D4057–88, ''Standard Practice for Manual Sampling of Petroleum and Petroleum Products'' (incorporated by reference under § 75.6 of this part).

2.2.2 Perform oil sampling every day the unit is combusting oil except as provided for diesel fuel. Use either the flow proportional method described in section 2.2.3 of this appendix or the daily manual method described in section 2.2.4 of this appendix.

2.2.3 Conduct flow proportional oil sampling or continuous drip oil sampling in accordance with ASTM D4177–82 (Reapproved 1990), ''Standard Practice for Automatic Sampling of Petroleum and Petroleum Products'' (incorporated by reference under § 75.6), every day the unit is combusting oil. Extract oil at least once every hour and blend into a daily composite sample. The sample composite period may not exceed 24 hr.

2.2.4 Representative as-fired oil samples may be taken manually every day that the unit combusts oil according to ASTM D4057–88, ''Standard Practice for Manual Sampling of Petroleum and Petroleum Products'' (incorporated by reference under § 75.6), provided that the highest fuel sulfur content recorded at that unit from the most recent 30 daily samples is used for the purposes of calculating SO_2 emissions under section 3 of this appendix. Use the gross calorific value measured from that day's sample to calculate heat input. If oil supplies with different sulfur contents are combusted on the same day, sample the highest sulfur fuel combusted that day.

Note: For units with pressurized fuel flow lines such as some diesel and dual-fuel reciprocating internal combustion engine units, a manual sample may be taken from the point closest to the unit where it is safe to take a sample (including back to the oil tank), rather than just prior to entry to the boiler or combustion chamber. As-delivered manual samples of diesel fuel need not be as-fired.

2.2.5 Split and label each oil sample. Maintain a portion (at least 200 cc) of each sample throughout the calendar year and in all cases for not less than 90 calendar days after the end of the calendar year allowance accounting period. Analyze oil samples for percent sulfur content by weight in accordance with ASTM D129–91, ''Standard Test Method for Sulfur in Petroleum Products (General Bomb Method),'' ASTM D1552–90, ''Standard Test Method for Sulfur in Petroleum Products (High Temperature Method),'' ASTM D2622–92, ''Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry,'' or ASTM D4294–90, ''Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy'' (incorporated by reference under § 75.6).

2.2.6 Where the flowmeter records volumetric flow rather than mass flow, analyze oil samples to determine the density or specific gravity of the oil. Determine the density or specific gravity of the oil sample in accordance with ASTM D287–82 (Reapproved 1991), ''Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method),'' ASTM D941–88, ''Standard Test Method for Density and Relative Density (Specific Gravity) of Liquids by Lipkin Bicapillary Pycnometer,'' ASTM D1217–91, ''Standard Test Method for Density and Relative Density (Specific Gravity) of Liquids by Bingham Pycnometer,'' ASTM D1481–91, ''Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Lipkin Bicapillary,'' ASTM D1480–91, ''Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Bingham Pycnometer,'' ASTM D1298–85 (Reapproved 1990), ''Standard Practice for Density, Relative Density (Specific Gravity) or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method,'' or ASTM D4052–91, ''Standard Test Method for Density and Relative Density of Liquids by Digital Density Meter'' (incorporated by reference under § 75.6).

2.2.7 Analyze oil samples to determine the heat content of the fuel. Determine oil heat content in accordance with ASTM D240–87 (Reapproved 1991), ''Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter,'' ASTM D2382–88, ''Standard Test Method for Heat or Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method)'', or ASTM D2015–91, ''Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter'' (incorporated by reference under § 75.6) or any other procedures listed in section 5.5 of appendix F of this part.

2.2.8 Results from the oil sample analysis must be available no later than thirty calendar days after the sample is composited or taken. However, during an audit, the Administrator may require that the results of the analysis be available within 5 business days, or sooner if practicable.

2.3 SO_2 Emissions from Combustion of Gaseous Fuels

Account for the hourly SO_2 mass emissions due to combustion of gaseous fuels for each day when gaseous fuels are combusted by the unit using the procedures in either section 2.3.1 or 2.3.2.

2.3.1 Sample the gaseous fuel daily.

2.3.1.1 Analyze the sulfur content of the gaseous fuel in grain/100 scf using ASTM D1072–90, ''Standard Test Method for Total Sulfur in Fuel Gases'', ASTM D4468–85 (Reapproved 1989) ''Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry,'' ASTM D5504–94 ''Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence,'' or ASTM D3246–81 (Reapproved 1987) ''Standard Test Method for Sulfur in Petroleum Gas By Oxidative Microcoulometry'' (incorporated by reference under § 75.6). The test may be performed by the owner or operator, an outside laboratory, or the gas supplier.

2.3.1.2 Results from the analysis must be available on-site no later than thirty calendar days after the sample is taken.

2.3.1.3 Determine the heat content or gross calorific value for at least one sample each month and use the procedures of section 5.5 of appendix F of this part to determine the heat input for each hour the unit combusted gaseous fuel.

2.3.1.4 Multiply the sulfur content by the hourly metered volume of gas combusted in 100 scf, using Equation D–4 of this appendix.

2.3.2 If the fuel is pipeline natural gas, calculate SO_2 emissions using a default SO_2 emission rate of 0.0006 lb/mmBtu.

2.3.2.1 Use the default SO_2 emission rate of 0.0006 lb/mmBtu and the hourly heat input from pipeline natural gas in mmBtu/hr, as determined using the procedures in section 5.5 of appendix F of this part. Calculate SO_2 emissions using Equation D–5 of this appendix.

2.3.2.2 Provide information on the contractual sulfur content from the pipeline gas supplier in the monitoring plan for the unit, demonstrating that the gas has a hydrogen sulfide content of 1 grain/100 scf or less, and a total sulfur content of 20 grain/100 scf or less.

2.4 Missing Data Procedures.

When data from the procedures of this part are not available, provide substitute data using the following procedures.

2.4.1 When sulfur content or oil density data from the analysis of an oil sample or when sulfur content data from the analysis of a gaseous fuel sample are missing or invalid, substitute, as applicable, the highest measured sulfur content or oil density (if using a volumetric oil flowmeter) recorded during the previous 30 days when the unit burned that fuel. If no previous sulfur content data are available, substitute the maximum potential sulfur content of that fuel.

2.4.2 When gross calorific value data from the analysis of an oil sample are missing or invalid, substitute the highest measured gross calorific value recorded during the previous 30 days that the unit burned oil. When gross calorific value data from the analysis of a monthly gaseous fuel sample are missing or invalid, substitute the highest measured gross calorific value recorded during the previous three months that the unit burned gaseous fuel.

2.4.3 Whenever data are missing from any fuel flowmeter that is part of an excepted monitoring system under appendix D or E of this part, where the fuel flowmeter data are required to determine the amount of fuel combusted by the unit, use the procedures in either section 2.4.3.1 or sections 2.4.3.2 and 2.4.3.3 prior to January 1, 1996 and use the procedures in sections 2.4.3.2 and 2.4.3.3 but do not use the procedures in section 2.4.3.1 on or after January 1, 1996 to account for the flow rate of fuel combusted at the unit for each hour during the missing data period.

2.4.3.1 When data from the fuel flowmeter are missing, substitute for each hour in the missing data period the average hourly oil flow rate measured and recorded by the fuel flowmeter at the closest unit load (in MWe) greater than the load recorded for the missing data period for which oil flow rate data are available during the previous 720 hours during which the unit combusted oil. If no oil flow rate data are available at a load greater than the load recorded during the missing data period, substitute the maximum flow rate that the flowmeter can measure.

2.4.3.2 For hours where only one fuel is combusted, substitute for each hour in the missing data period the average of the hourly fuel flow rate(s) measured and recorded by the fuel flowmeter (or flowmeters, where fuel is recirculated) at the corresponding operating unit load range recorded for each missing hour during the previous 720 hours during which the unit combusted that same fuel only. Establish load ranges for the unit using the procedures of section 2 in appendix C of this part for missing volumetric flow rate data. If no fuel flow rate data are available at the corresponding load range, use data from the next higher load range where data are available. If no fuel flow rate data are available at either the corresponding load range or a higher load range during any hour of the missing data period for that fuel, substitute the maximum potential fuel flow rate. The maximum potential fuel flow rate is the lesser of the following: (1) the maximum fuel flow rate the unit is capable of combusting or (2) the maximum flow rate that the flowmeter can measure.

2.4.3.3 For hours where two or more fuels are combusted, substitute the maximum hourly fuel flow rate measured and recorded by the flowmeter (or flowmeters, where fuel is recirculated) for the fuel for which data are missing at the corresponding load range recorded for each missing hour during the previous 720 hours when the unit combusted that fuel with any other fuel. For hours where no previous recorded fuel flow rate data are available for that fuel during the missing data period, calculate and substitute the maximum potential flow rate of that fuel for the unit as defined in section 2.4.3.2 of this appendix.

2.4.4. In any case where the missing data provisions of this section require substitution of data measured and recorded more than three years (26,280 clock hours) prior to the date and time of the missing data period, use three years (26,280 clock hours) in place of the prescribed lookback period.

* * * * *

64. Appendix D to part 75, section 3 is amended by revising the introductory paragraph; by revising the section heading of section 3.1; by revising the definition of the variable ''M_{SO2}'' in Equation D–2 in section 3.1.1; by revising section 3.1.2; by revising the section heading of section 3.2; by revising section 3.2.1; and by adding sections 3.3, 3.3.1, 3.3.2, 3.3.3, and 3.4 to read as follows:

3. Calculations

Use the calculation procedures in section 3.1 of this appendix to calculate SO_2 mass emissions. Where an oil flowmeter records volumetric flow, use the calculation procedures in section 3.2 of this appendix to calculate mass flow of oil. Calculate hourly SO_2 mass emissions from gaseous fuel using the procedures in section 3.3 of this appendix. Calculate hourly heat input for oil and for gaseous fuel using the equations in section 5.5 of Appendix F of this part. Calculate total SO_2 mass emissions and heat input as provided under section 3.4 of this appendix.

3.1 SO_2 Mass Emissions Calculation for Oil

3.1.1 * * *

Where:

M_{SO2}=Hourly mass of SO_2 emitted from combustion of oil, lb/hr.

* * * * *

3.1.2 Record the SO_2 mass emissions from oil for each hour that oil is combusted.

3.2 Mass Flow Calculation for Oil Using Volumetric Flow

3.2.1 Where the oil flowmeter records volumetric flow rather than mass flow, calculate and record the oil mass flow for each hourly period using hourly oil flow measurements and the density or specific gravity of the oil sample.

* * * * *

3.3 SO_2 Mass Emissions Calculation for Gaseous Fuels

3.3.1 Use the following equation to calculate the SO_2 emissions using the gas sampling and analysis procedures in section 2.3.1 of this appendix:

$$M_{SO_2g} = \left(\frac{2.0}{7000}\right) \times Q_g \times S_g \qquad \text{(Eq. D–4)}$$

Where:

M_{SO2g}=Hourly mass of SO_2 emitted due to combustion of gaseous fuel, lb/hr.

Q_g=Hourly metered flow or amount of gaseous fuel combusted, 100 scf/hr.

S_g=Sulfur content of gaseous fuel, in grain/100 scf.

2.0=Ratio of lb SO_2/lb S.

7000=Conversion of grains/100 scf to lb/100 scf.

3.3.2 Use the following equation to calculate the SO_2 emissions using the 0.0006 lb/mmBtu emission rate in section 2.3.2 of this appendix:

$$M_{SO_2g} = ER \times HI_g \qquad \text{(Eq. D–5)}$$

Where:

M_{SO2g}=Hourly mass of SO_2 emissions from combustion of pipeline natural gas, lb/hr.

ER=SO_2 emission rate of 0.0006 lb/mmBtu for pipeline natural gas.

HI_g=Hourly heat input of pipeline natural gas, calculated using procedures in appendix F of this part, in mmBtu/hr.

3.3.3 Record the SO_2 mass emissions for each hour when the unit combusts gaseous fuel.

3.4 Records and Reports

Calculate and record quarterly and cumulative SO_2 mass emissions and heat input for each calendar quarter and for the calendar year by summing the hourly values. Calculate and record SO_2 emissions and heat input data using a data acquisition and handling system. Report these data in a standard electronic format specified by the Administrator.

* * * * *

Appendix E to Part 75—Optional NO_X Emissions Estimation Protocol for Gas-Fired Peaking Units and Oil-Fired Peaking Units

65. Appendix E to part 75, section 1 is amended by revising section 1.1; by removing section 1.2, redesignating sections 1.3, 1.3.1 and 1.3.2 as sections 1.2, 1.2.1 and 1.2.2 and revising new sections 1.2, 1.2.1 and 1.2.2 to read as follows:

1. Applicability

1.1 Unit Operation Requirements

This NO_X emissions estimation procedure may be used in lieu of a continuous NO_X emission monitoring system (lb/mmBtu) for determining the average NO_X emission rate and hourly NO_X rate from gas-fired peaking units and oil-fired peaking units as defined in § 72.2 of this chapter. If a unit's operations exceed the levels required to be a peaking unit, install and certify a continuous NO_X emission monitoring system no later than December 31 of the following calendar year. The provisions of § 75.12 apply to excepted monitoring systems under this appendix.

1.2 Certification

1.2.1 Pursuant to the procedures in § 75.20, complete all testing requirements to certify use of this protocol in lieu of a NO_X continuous emission monitoring system no later than the applicable deadline specified in § 75.4. Apply to the Administrator for certification to use this method no later than 45 days after the completion of all certification testing. Whenever the monitoring method is to be changed, reapply to the Administrator for certification of the new monitoring method.

1.2.2 If the owner or operator has already successfully completed certification testing of the unit using the protocol of appendix E of part 75 and submitted a certification application under § 75.20(g) prior to _______ July 17, 1995, the unit's monitoring system does not need to repeat initial certification testing using the revised procedures published _______ May 17, 1995.

* * * * *

66. Appendix E to part 75, section 2 is amended by revising sections 2.1, 2.1.1, 2.1.2, 2.1.2.1, and 2.1.2.2; by removing section 2.1.2.3 and redesignating section 2.1.2.4 as 2.1.2.3; by revising sections 2.1.3, 2.1.3.1, and 2.1.3.2; by revising sections 2.1.4, 2.1.5, 2.1.6, 2.1.6.1, and 2.1.6.2; by revising sections 2.3, 2.3.1 and 2.3.2; by removing sections 2.1.4.1, 2.1.4.2, 2.1.4.3, 2.1.4.4, 2.3.3, 2.3.3.1 and 2.3.3.3; by redesignating section 2.3.3.2 as section 2.3.3 and revising new section 2.3.3; by revising section 2.4.1; by revising section 2.4.2 and adding sections 2.4.3 and 2.4.4; by revising section 2.5 and adding sections 2.5.1, 2.5.2, 2.5.3, 2.5.4, and 2.5.5 to read as follows:

2. Procedure

2.1 Initial Performance Testing

Use the following procedures for: measuring NO_X emission rates at heat input rate levels corresponding to different load levels; measuring heat input rate; and plotting the correlation between heat input rate and NO_X emission rate, in order to determine the emission rate of the unit(s).

2.1.1 Load Selection

Establish at least four approximately equally spaced operating load points, ranging from the maximum operating load to the minimum operating load. Select the maximum and minimum operating load from the operating history of the unit during the most recent two years. (If projections indicate that the unit's maximum or minimum operating load during the next five years will be significantly different from the most recent two years, select the maximum and minimum operating load based on the projected dispatched load of the unit.) For new gas-fired peaking units or new oil-fired peaking units, select the maximum and minimum operating load from the expected maximum and minimum load to be dispatched to the unit in the first five calendar years of operation.

2.1.2 NO_X and O_2 Concentration Measurements

Use the following procedures to measure NO_X and O_2 concentration in order to determine NO_X emission rate.

2.1.2.1 For boilers, select an excess O_2 level for each fuel (and, optionally, for each combination of fuels) to be combusted that is representative for each of the four or more load levels. If a boiler operates using a single, consistent combination of fuels only, the testing may be performed using the combination rather than each fuel. If a fuel is combusted only for the purpose of testing ignition of the burners for a period of five minutes or less per ignition test or for start-up, then the boiler NO_X emission rate does not need to be tested separately for that fuel. Operate the boiler at a normal or conservatively high excess oxygen level in conjunction with these tests. Measure the NO_X and O_2 at each load point for each fuel or consistent fuel combination (and, optionally, for each combination of fuels) to be combusted. Measure the NO_X and O_2 concentrations according to Method 7E and 3A in appendix A of part 60 of this chapter. Select sampling points as specified in section 5.1, Method 3 in appendix A of part 60 of this chapter. The designated representative for the unit may also petition the Administrator under § 75.66 to use fewer sampling points. Such a petition shall include the proposed alternative sampling procedure and information demonstrating that there is no concentration stratification at the sampling location.

2.1.2.2 For stationary gas turbines, select sampling points and measure the NO_X and O_2 concentrations at each load point for each fuel or consistent combination of fuels (and, optionally, each combination of fuels) according to appendix A, Method 20 of part 60 of this chapter. For diesel or dual fuel reciprocating engines, measure the NO_X and O_2 concentrations according to Method 20, but modify Method 20 by selecting a sampling site to be as close as practical to the exhaust of the engine.

2.1.2.3 Allow the unit to stabilize for a minimum of 15 minutes (or longer if needed for the NO_X and O_2 readings to stabilize) prior to commencing NOx, O_2, and heat input measurements. Determine the average measurement system response time according to section 5.5 of Method 20 in appendix A, part 60 of this chapter. When inserting the probe into the flue gas for the first sampling point in each traverse, sample for at least one minute plus twice the average measurement system response time (or longer, if necessary to obtain a stable reading). For all other sampling points in each traverse, sample for at least one minute plus the average measurement response time (or longer, if necessary to obtain a stable reading). Perform three test runs at each load condition and obtain an arithmetic average of the runs for each load condition. During each test run on a boiler, record the boiler excess oxygen level at 5 minute intervals.

2.1.3 Heat Input

Measure the total heat input (mmBtu) and heat input rate during testing (mmBtu/hr) as follows:

2.1.3.1 When the unit is combusting fuel, measure and record the flow of fuel consumed. Measure the flow of fuel with an in-line flowmeter(s) and automatically record the data. If a portion of the flow is diverted from the unit without being burned, and that diversion occurs downstream of the fuel flowmeter, an in-line flowmeter is required to account for the unburned fuel. Install and calibrate in-line flow meters using the procedures and specifications contained in sections 2.1.2, 2.1.3, 2.1.4, and 2.1.5 of appendix D of this part. Correct any gaseous fuel flow rate measured at actual temperature and pressure to standard conditions of 68°F and 29.92 inches of mercury.

2.1.3.2 For liquid fuels, analyze fuel samples taken according to the requirements of section 2.2 of appendix D of this part to determine the heat content of the fuel. Determine heat content of liquid or gaseous fuel in accordance with the procedures in appendix F of this part. Calculate the heat input rate during testing (mmBtu/hr) associated with each load condition in accordance with Equations F–19 or F–20 in appendix F of this part and total heat input using Equation E–1 of this appendix. Record the heat input rate at each heat input/load point.

2.1.4 Emergency Fuel

The designated representative of a unit that is restricted by its Federal, State or local permit to combusting a particular fuel only during emergencies where the primary fuel is not available may petition the Administrator pursuant to the procedures in § 75.66 for an exemption from the requirements of this appendix for testing the NO_X emission rate during combustion of the emergency fuel. The designated representative shall include in the petition a procedure for determining the NO_X emission rate for the unit when the emergency fuel is combusted, and a demonstration that the permit restricts use of the fuel to emergencies only. The designated representative shall also provide notice under § 75.61(a) for each period when the emergency fuel is combusted.

2.1.5 Tabulation of Results

Tabulate the results of each baseline correlation test for each fuel or, as applicable, combination of fuels, listing: time of test, duration, operating loads, heat input rate (mmBtu/hr), F-factors, excess oxygen levels, and NO_X concentrations (ppm) on a dry basis (at actual excess oxygen level). Convert the NO_X concentrations (ppm) to NO_X emission rates (to the nearest 0.01 lb/mm/Btu) according to Equation F–5 of appendix F of this part or 19–3 in Method 19 of appendix A of part 60 of this chapter, as appropriate. Calculate the NO_X emission rate in lb/mmBtu for each sampling point and determine the arithmetic average NO_X emission rate of each test run. Calculate the arithmetic average of the boiler excess oxygen readings for each test run. Record the arithmetic average of the three test runs as the NO_X emission rate and the boiler excess oxygen level for the heat input/load condition.

2.1.6 Plotting of Results

Plot the tabulated results as an x–y graph for each fuel and (as applicable) combination of fuels combusted according to the following procedures.

2.1.6.1 Plot the heat input rate (mmBtu/hr) as the independent (or x) variable and the NO_X emission rates (lb/mmBtu) as the dependent (or y) variable for each load point. Construct the graph by drawing straight line segments between each load point. Draw a horizontal line to the y-axis from the minimum heat input (load) point.

2.1.6.2 Units that co-fire gas and oil may be tested while firing gas only and oil only instead of testing with each combination of fuels. In this case, construct a graph for each fuel.

2.2 * * *

2.3 Other Quality Assurance/Quality Control-Related NOx Emission Rate Testing

When the operating levels of certain parameters exceed the limits specified below, or where the Administrator issues a notice requesting retesting because the NO_X emission rate data availability for when the unit operates within all quality assurance/ quality control parameters in this section since the last test is less than 90.0 percent, as calculated by the Administrator, complete retesting of the NO_X emission rate by the earlier of: (1) 10 unit operating days (as defined in section 2.1 of appendix B of this part) or (2) 180 calendar days after exceeding the limits or after the date of issuance of a notice from the Administrator to re-verify the unit's NO_X emission rate. Submit test results in accordance with § 75.60(a) within 45 days of completing the retesting.

2.3.1 For a stationary gas turbine, obtain a list of at least four operating parameters indicative of the turbine's NO_X formation characteristics, and the recommended ranges for these parameters at each tested load-heat input point, from the gas turbine manufacturer. If the gas turbine uses water or steam injection for NO_X control, the water/ fuel or steam/fuel ratio shall be one of these parameters. During the NOx-heat input correlation tests, record the average value of each parameter for each load-heat input to ensure that the parameters are within the manufacturer's recommended range. Redetermine the NO_X emission rate-heat input correlation for each fuel and (optional) combination of fuels after continuously exceeding the manufacturer's recommended range of any of these parameters for one or more successive operating periods totaling more than 16 unit operating hours.

2.3.2 For a diesel or dual-fuel reciprocating engine, obtain a list of at least four operating parameters indicative of the engine's NO_X formation characteristics, and the recommended ranges for these parameters at each tested load-heat input point, from the engine manufacturer. Any operating parameter critical for NO_X control shall be included. During the NO_X heat-input correlation tests, record the average value of each parameter for each load-heat input to ensure that the parameters are within the manufacturer's recommended range. Redetermine the NO_X emission rate-heat input correlation for each fuel and (optional) combination or fuels after continuously exceeding the manufacturer's recommended range of any of these parameters for one or more successive operating periods totaling more than 16 unit operating hours.

2.3.3 For boilers using the procedures in this appendix, the NO_X emission rate heat input correlation for each fuel and (optional) combination of fuels shall be redetermined if the excess oxygen level at any heat input rate (or unit operating load) continuously exceeds by more than 2 percentage points O_2 from the boiler excess oxygen level recorded at the same operating heat input rate during the previous NO_X emission rate test for one or more successive operating periods totaling more than 16 unit operating hours.

2.4 Procedures for Determining Hourly NO_X Emission Rate

2.4.1 Record the time (hr. and min.), load (MWge or steam load in 1000 lb/hr), fuel flow rate and heat input rate (using the procedures in section 2.1.3 of this appendix) for each hour during which the unit combusts fuel. Calculate the total hourly heat input using Equation E–1 of this appendix. Record the heat input rate for each fuel to the nearest 0.1 mmBtu/hr. During partial unit operating hours or during hours where more than one fuel is combusted, heat input must be represented as an hourly rate in mmBtu/hr, as if the fuel were combusted for the entire hour at that rate (and not as the actual, total heat input during that partial hour or hour) in order to ensure proper correlation with the NO_X emission rate graph.

2.4.2 Use the graph of the baseline correlation results (appropriate for the fuel or fuel combination) to determine the NO_X emissions rate (lb/mmBtu) corresponding to the heat input rate (mmBtu/hr). Input this correlation into the data acquisition and handling system for the unit. Linearly interpolate to 0.1 mmBtu/hr heat input rate and 0.01 lb/mmBtu NO_X.

2.4.3 To determine the NO_X emission rate for a unit co-firing fuels that has not been tested for that combination of fuels, interpolate between the NO_X emission rate for each fuel as follows. Determine the heat input rate for the hour (in mmBtu/hr) for each fuel and select the corresponding NO_X emission rate for each fuel on the appropriate graph. (When a fuel is combusted for a partial hour, determine the fuel usage time for each fuel and determine the heat input rate from each fuel as if that fuel were combusted at that rate for the entire hour in order to select the corresponding NO_X emission rate.) Calculate the total heat input to the unit in mmBtu for the hour from all fuel combusted using Equation E–1. Calculate a Btu-weighted average of the emission rates for all fuels using Equation E–2 of this appendix.

2.4.4 For each hour, record the critical quality assurance parameters, as identified in the monitoring plan, and as required by section 2.3 of this appendix.

2.5 Missing Data Procedures

Provide substitute data for each unit electing to use this alternative procedure whenever a valid quality-assured hour of NO_X emission rate data has not been obtained according to the procedures and specifications of this appendix.

2.5.1 Use the procedures of this section whenever any of the quality assurance/quality control parameters exceeds the limits in section 2.3 of this appendix or whenever any of the quality assurance/quality control parameters are not available.

2.5.2 Substitute missing NO_X emission rate data using the highest NO_X emission rate tabulated during the most recent set of baseline correlation tests for the same fuel or, if applicable, combination of fuels.

2.5.3 Maintain a record indicating which data are substitute data and the reasons for the failure to provide a valid quality-assured hour of NO_X emission rate data according to the procedures and specifications of this appendix.

2.5.4 Substitute missing data from a fuel flowmeter using the procedures in section 2.4.3 of appendix D of this part.

2.5.5 Substitute missing data for gross calorific value of fuel using the procedures in section 2.4.2 of appendix D of this part.

* * * * *

67. Appendix E to part 75, section 3 is amended by revising section 3.1; by removing section 3.2, redesignating section 3.3 as 3.2, and revising new section 3.2; by redesignating sections 3.4, 3.4.1, 3.4.2, 3.4.3 as 3.3, 3.3.1, 3.3.2, and 3.3.3; and by removing sections 3.4.4 and 3.5 and adding section 3.3.4 to read as follows:

3. Calculations

3.1 Heat Input

Calculate the total heat input by summing the product of heat input rate and fuel usage time of each fuel, as in the following equation:

$$H_T = HI_{fuel1}\, t_1 + HI_{fuel2}\, t_2 + HI_{fuel3}\, t_3 + \ldots + HI_{lastfuel}\, t_{last} \qquad \text{(Eq. E–1)}$$

Where:

H_T = Total heat input of fuel flow or a combination of fuel flows to a unit, mmBtu;

$HI_{fuel\ 1,2,3,\ldots last}$ = Heat input rate from each fuel during fuel usage time, in mmBtu/hr, as determined using equation F–19 or F–20 in section 5.5 of appendix F of this part, mmBtu/hr;

$t_{1,2,3\ldots last}$ = Fuel usage time for each fuel, rounded up to the nearest .25 hours.

Note: For hours where a fuel is combusted for only part of the hour, use the fuel flow rate or mass flow rate during the fuel usage time, instead of the total fuel flow during the hour, when calculating heat input rate using Equation F–19 or F–20.

3.2 F-factors

Determine the F-factors for each fuel or combination of fuels to be combusted according to section 3.3 of appendix F of this part.

3.3 NO_X Emission Rate

3.3.1 Conversion from Concentration to Emission Rate [Amended]

Convert the NO_X concentrations (ppm) and O_2 concentrations to NO_X emission rates (to the nearest 0.01 lb/mmBtu) according to the appropriate one of the following equations: F–5 in appendix F of this part for dry basis concentration measurements, or 19–3 in Method 19 of appendix A of part 60 of this chapter for wet basis concentration measurements.

3.3.2 Quarterly Average NO_X Emission Rate

Report the quarterly average emission rate (lb/mmBtu) as required in subpart G of this part. Calculate the quarterly average NO_X emission rate according to Equation F–9 in Appendix F of this part.

3.3.3 Annual Average NO_X Emission Rate

Report the average emission rate (lb/mmBtu) for the calendar year as required in subpart G of this part. Calculate the average NO_X emission rate according to equation F–10 in appendix F of this part.

3.3.4 Average NO_X Emission Rate During Co-firing of Fuels [Amended] (Eq. E–2)

$$E_h = \frac{\sum_{f=1}^{\text{all fuels}} \left(E_f \times HI_f\ t_f\right)}{H_T}$$

Where:

E_h=NO_X emission rate for the unit for the hour, lb/mmBtu;

E_f=NO_X emission rate for the unit for a given fuel at heat input rate HI_f, lb/mmBtu;

HI_f=Heat input rate for a given fuel during the fuel usage time, as determined using equation F–19 or F–20 in section 5.5 of appendix F of this part, mmBtu/hr;

H_T=Total heat input for all fuels for the hour from Equation E–1;

t_t=Fuel usage time for each fuel, rounded to the nearest .25 hour.

Note: For hours where a fuel is combusted for only part of the hour, use the fuel flow rate or mass flow rate during the fuel usage time, instead of the total fuel flow or mass flow during the hour, when calculating heat input rate using Equation F–19 or F–20.

* * * * *

68. Appendix E to part 75, section 4 is amended by revising the introductory paragraph and section 4.1 to read as follows:

4. Quality Assurance/Quality Control Plan

Include a section on the NO_X emission rate determination as part of the monitoring quality assurance/quality control plan required under § 75.21 and appendix B of this part for each gas-fired peaking unit and each oil-fired peaking unit. In this section present information including, but not limited to, the following: (1) a copy of all data and results from the initial NO_X emission rate testing, including the values of quality assurance parameters specified in Section 2.3 of this appendix; (2) a copy of all data and results from the most recent NO_X emission rate load correlation testing; (3) a copy of the unit manufacturer's recommended range of quality assurance- and quality control-related operating parameters.

4.1 Submit a copy of the unit manufacturer's recommended range of operating parameter values, and the range of operating parameter values recorded during the previous NO_X emission rate test that determined the unit's NO_X emission rate, along with the unit's revised monitoring plan submitted with the certification application.

* * * * *

Appendix F to Part 75—Conversion Procedures

69. Appendix F to part 75, section 2 is amended by revising section 2.4 to read as follows:

* * * * *

2. Procedures for SO_2 Emissions

* * * * *

2.4 Round all SO_2 mass emissions to the number of decimal places identified in § 75.50(c) or § 75.54(c) of this part (in lb/hr).

* * * * *

70. Appendix F to part 75, section 3 is amended by revising the equation in section 3.2, by adding a sentence to the end of 3.3.4. and by revising sections 3.3.6.1, 3.3.6.2, and 3.4 to read as follows:

3. Procedures for NO_X Emission Rate

* * * * *

3.2 When the NO_X continuous emission monitoring system uses CO_2 as the diluent, use the following conversion procedure:

$$E = K\,C_h\,F_c\,\frac{100}{\%CO_2} \qquad \text{(Eq. F–6)}$$

where:

K, E, Ch, Fc, and $\%CO_2$ are defined in section 3.3 of this appendix.

Where CO_2 and NO_X measurements are performed on a different moisture basis, use the equations in Method 19 in Appendix A of part 60 of this chapter.

* * * * *

3.3.4 * * * A minimum concentration of 5.0 percent CO_2 and a maximum concentration of 14.0 percent O_2 may be substituted for measured diluent gas concentration values during unit start-up.

3.3.5 * * *

3.3.6 * * *

3.3.6.1 H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined on the same basis as the gross calorific value (GCV) by ultimate analysis of the fuel combusted using ASTM D3176–89, ''Standard Practice for Ultimate Analysis of Coal and Coke'' (solid fuels), ASTM D5291–92, ''Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants'' (liquid fuels) or computed from results using ASTM D1945–91, ''Standard Test Method for Analysis of Natural Gas by Gas Chromatography'' or ASTM D1946–90, ''Standard Practice for Analysis of Reformed Gas by Gas Chromatography'' (gaseous fuels) as applicable. (These methods are incorporated by reference under § 75.6 of this part.)

3.3.6.2 GCV is the gross calorific value (Btu/lb) of the fuel combusted determined by ASTM D2015–91, ''Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter'', ASTM D1989–92 ''Standard Test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters,'' or ASTM D3286–91a ''Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter'' for solid and liquid fuels, and ASTM D240–87 (Reapproved 1991) ''Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter'', or ASTM D2382–88 ''Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method)'' for oil; and ASTM D3588–91 ''Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density (Specific Gravity) of Gaseous Fuels,'' ASTM D4891–89 ''Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion,'' GPA Standard 2172 86 ''Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis,'' GPA Standard 2261–90 ''Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography,'' or ASTM D1826–88, ''Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter'' for gaseous fuels, as applicable. (These methods are incorporated by reference under § 75.6).

3.3.6.3 * * *

3.3.6.4 * * *

3.4 Use the following equations to calculate the average NO_X emission rate for each calendar quarter (Eq. F–9) and the average emission rate for the calendar year (Eq. F–10) in lb/mmBtu.

$$E_q = \sum_{i=1}^{n} \frac{E_i}{n} \qquad \text{(Eq. F–9)}$$

where:

Eq=Quarterly average NO_X emission rate, lb/mmBtu.

Ei=Hourly average Nox emission rate, lb/mmBtu.

n=Number of hourly rates during calendar quarter.

$$E_a = \sum_{i=1}^{n} \frac{E_i}{m} \qquad \text{(Eq. F–10)}$$

where:

E_a=Average NO_X emission rate for the calendar year, lb/mmBtu.

E_i=Hourly average NO_X emission rate, lb/mmBtu.

m=Number of hours for which E_i is available in the calendar year.

3.5 * * *

* * * * *

71. Appendix F to part 75, section 4 is amended by revising the introductory paragraph, by revising the definition of the variable ''C_h'' in Equation F–11 in section 4.1, by revising sections 4.4.1 and 4.4.2. and by adding two sentences to the beginning of sections 4.3.1, 4.3.2, 4.3.3, and 4.4.3 to read as follows:

4. Procedures for CO_2 Mass Emissions

Use the following procedures to convert continuous emission monitoring system measurements of CO_2 concentration (percentage) and volumetric flow rate (scfh) into CO_2 mass emissions (in tons/day) when the owner or operator uses a CO_2 continuous emission monitoring system (consisting of a CO_2 or O_2 pollutant monitor) and a flow monitoring system to monitor CO_2 emissions from an affected unit.

4.1 * * *

(Eq. F–11)

Where:

* * * * *

C_h=Hourly average CO_2 concentration, stack moisture basis, $\%CO_2$. A minimum concentration of 5.0 percent CO_2 may be substituted for the measured concentration during unit start-up.

* * * * *

4.2 * * *

4.3 * * *

4.3.1 On or after January 1, 1996, use the missing data provisions of § 75.35 and do not use the provisions of this section. Prior to January 1, 1996, use either the provisions of this section or the provisions of § 75.35. * * *

4.3.2 On or after January 1, 1996, use the missing data provisions of § 75.35 and do not use the provisions of this section. Prior to January 1, 1996, use either the provisions of this section or the provisions of § 75.35. * * *

4.3.3 On or after January 1, 1996, use the missing data provisions of § 75.35 and do not use the provisions of this section. Prior to January 1, 1996, use either the provisions of this section or the provisions of § 75.35. * * *

4.4 For an affected unit, when the owner or operator is continuously monitoring O_2 concentration (in percent by volume) of flue gases using an O_2 monitor, use the equations and procedures in section 4.4.1 through 4.4.3 of this appendix to determine hourly CO_2 mass emissions (in tons).

4.4.1 Use appropriate F and F_c factors from section 3.3.5 of this appendix in the following equation to determine hourly average CO_2 concentration of flue gases (in percent by volume).

$$CO_{2d} = 100 \frac{F_c}{F} \frac{20.9 - O_{2d}}{20.9} \quad \text{(Eq. F–14a)}$$

(Eq. F–14a)

Where:

CO_{2d}=Hourly average CO_2 concentration, percent by volume, dry basis.
F, F_c=F-factor or carbon-based Fc-factor from section 3.3.5 of this appendix.
20.9=Percentage of O_2 in ambient air.
O_{2d}=Hourly average O_2 concentration, percent by volume, dry basis. A maximum concentration of 14.0 percent O2 may be substituted for the measured concentration during unit start-up.

or

(Eq. F–14b)

Where:

CO_{2w}=Hourly average CO_2 concentration, percent by volume, wet basis.
O_{2w}=Hourly average O_2 concentration, percent by volume, wet basis. A maximum concentration of 14.0 percent O_2 may be substituted for the measured concentration during unit start-up.
F, F_c=F-factor or carbon-based F_c-factor from section 3.3.5 of this appendix.
20.9=Percentage of O_2 in ambient air.
%H_2O=Moisture content of gas in the stack, percent.

4.4.2 Determine CO_2 mass emissions (in tons) from hourly average CO_2 concentration (percent by volume) using Equation F–11 and the procedure in section 4.1, where O_2 measurements are on a wet basis, or using the procedures in section 4.2 of this appendix, where O_2 measurements are on a dry basis.

4.4.3 On or after January 1, 1996, use the missing data provisions of § 75.35 and do not use the provisions of this section. Prior to January 1, 1996, either use the provisions of § 75.35 or use the provisions of this section. * * *

* * * * *

72. Appendix F to part 75, section 5 is amended by revising section 5.1 and by revising the definition of the variable ''%CO_{2w}'' in Equation F–15 in section 5.2.1, by revising the definition of the variable ''%CO_{2d}'' in Equation F–16 in section 5.2.2, by revising the definition of the variable ''%O_{2w}'' in Equation F–17 in section 5.2.3, and by revising the definition of the variable ''%O_{2d}'' in Equation F–18 in section 5.2.4, by revising seciton 5.5.1, by adding two sentences to the beginning of sections 5.3, and 5.4; by revising section 5.5; by revising section 5.5.2; by revising section 5.5.3.1; by revising section 5.5.3.2;by revising section 5.5.3.3; and by adding new sections 5.5.4, 5.5.5, 5.5.6, and 5.5.7 to read as follows:

5. Procedures for Heat Input

* * * * *

5.1 Calculate and record heat input to an affected unit on an hourly basis, except as provided below. The owner or operator may choose to use the provisions specified in § 75.16(e) or in section 2.1.2 of appendix D of this part in conjunction with the procedures provided below to apportion heat input among each unit using the common stack or common pipe header.

5.2 * * *

5.2.1 * * *

(Eq. F–15)

Where:

%CO_{2w}=Hourly concentration of CO_2, percent CO_2 wet basis. A minimum concentration of 5.0 percent CO_2 may be substituted for the measured concentration during unit startup.

5.2.2 * * *

(Eq. F–16)

Where:

%CO_{2d}=Hourly concentration of CO_2, percent CO_2 dry basis. A minimum concentration of 5.0 percent CO_2 may be substituted for the measured concentration during unit startup.

* * * * *

5.2.3 * * *

(Eq. F–17)

Where:

%O_{2w}=Hourly concentration of O_2, percent O_2 wet basis. A maximum concentration of 14.0 percent O_2 may be substituted for the measured concentration during unit startup.

* * * * *

5.2.4 * * *

(Eq. F–18)

Where:

%O_{2d}=Hourly concentration of O_2, percent O_2 dry basis. A maximum concentration of 14.0 percent O_2 may be substituted for the measured concentration during unit startup.

* * * * *

5.3 On or after January 1, 1996, use the missing data provisions of § 75.36 and do not use the provisions of this section. Prior to January 1, 1996, use either the missing data provisions of this section or the provisions of § 75.36. * * *

5.4 On or after January 1, 1996, use the missing data provisions of § 75.36 and do not use the provisions of this section. Prior to January 1, 1996, use either the missing data provisions of this section or the provisions of § 75.36. * * *

5.5 For a gas-fired or oil-fired unit that does not have a flow monitor and is using the procedures specified in appendix D to this part to monitor SO_2 emissions or for any affected unit using a common stack for which the owner or operator chooses to determine heat input by fuel sampling and analysis, use the following procedures to calculate hourly heat input in mmBtu/hr.

5.5.1 When the unit is combusting oil, use the following equation to calculate hourly heat input.

(Eq. F–19)

$$HI_o = M_o \frac{GCV_o}{10^6} \quad \text{(Eq. F–19)}$$

Where:

HIo=Hourly heat input from oil, mmBtu/hr.
Mo=Mass of oil consumed per hour, as determined using procedures in appendix D of this part, in lb, tons, or kg.
GCVo=Gross calorific value of oil, as measured daily by ASTM D240–87 (Reapproved 1991), ASTM D2015–91, or ASTM D2382–88, Btu/unit mass (incorporated by reference under § 75.6 of this part).
106=Conversion of Btu to mmBtu.

When performing oil sampling and analysis solely for the purpose of the missing data procedures in § 75.36, oil samples for measuring GCV may be taken weekly and the procedures specified in appendix D of this part for determining the mass of oil consumed per hour are optional.

5.5.2 When the unit is combusting gaseous fuels, use the following equation to calculate heat input from gaseous fuels for each hour.

(Eq. F–20)

$$HI_g = \frac{Q_g \times GCV_g}{10{,}000} \quad \text{(Eq. F–20)}$$

Where:

HI_g=Hourly heat input from gaseous fuel, mmBtu/hour.
Q_g=Metered flow or amount of gaseous fuel combusted during the hour, hundred cubic feet.
GCV_g=Gross calorific value of gaseous fuel, as determined by sampling at least every month the gaseous fuel is combusted, or as verified by the contractual supplier at least once every month the gaseous fuel is combusted using ASTM D1826–88, ASTM D3588–91, ASTM D4891–89, GPA Standard 2172–86 ''Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis,'' or GPA Standard 2261–90 ''Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography,'' Btu/cubic foot (incorporated by reference under § 75.6 of this part).
10,000=Conversion factor, (Btu-100 scf)/(mmBtu-scf).

5.5.3 * * *

5.5.3.1 Perform coal sampling daily according to section 5.3.2.2 in Method 19 in appendix A to part 60 of this chapter and use

ASTM Method D2234–89, ''Standard Test Methods for Collection of a Gross Sample of Coal,'' (incorporated by reference under § 75.6) Type I, Conditions A, B, or C and systematic spacing for sampling. (When performing coal sampling solely for the purposes of the missing data procedures in § 75.36, use of ASTM D2234–89 is optional, and coal samples may be taken weekly.)

5.5.3.2 Use ASTM D2013–86, ''Standard Method of Preparing Coal Samples for Analysis,'' for preparation of a daily coal sample and analyze each daily coal sample for gross calorific value using ASTM D2015–91, ''Standard Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter'', ASTM 1989–92 ''Standard Test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters,'' or ASTM 3286–91a ''Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter.'' (All ASTM methods are incorporated by reference under § 75.6 of this part.)

On-line coal analysis may also be used if the on-line analytical instrument has been demonstrated to be equivalent to the applicable ASTM methods under §§ 75.23 and 75.66.

5.5.3.3 Calculate the heat input from coal using the following equation:

$$HI_c = M_c \frac{GCV_c}{500} \qquad \text{(Eq. F–21)}$$

(Eq. F–21)

Where:

HI_c=Daily heat input from coal, mmBtu/day.

M_c=Mass of coal consumed per day, as measured and recorded in company records, tons.

GCV_c=Gross calorific value of coal sample, as measured by ASTM D3176–89, D1989–92, D3286–91a, or D2015–91, Btu/lb.

500=Conversion of Btu/lb to mmBtu/ton.

5.5.4 For units obtaining heat input values daily instead of hourly, apportion the daily heat input using the fraction of the daily steam load or daily unit operating load used each hour in order to obtain HI_i for use in the above equations. Alternatively, use the hourly mass of coal consumed in equation F–21.

5.5.5 If a daily fuel sampling value for gross calorific value is not available, substitute the maximum gross calorific value measured from the previous 30 daily samples. If a monthly fuel sampling value for gross calorific value is not available, substitute the maximum gross calorific value measured from the previous 3 monthly samples.

5.5.6 If a fuel flow value is not available, use the fuel flowmeter missing data procedures in section 2.4 of appendix D of this part. If a daily coal consumption value is not available, substitute the maximum fuel feed rate during the previous thirty days when the unit burned coal.

5.5.7 Results for samples must be available no later than thirty calendar days after the sample is composited or taken. However, during an audit, the Administrator may require that the results be available in five business days, or sooner if practicable.

* * * * *

73. Appendix F to part 75, section 6 is amended by revising the definitions for Equation F–22 to read as follows:

6. Procedure for Converting Volumetric Flow to STP

* * * * *

(Eq. F–22)

Where:

F_{STP}=Flue gas volumetric flow rate at standard temperature and pressure, scfh.

F_{Actual}=Flue gas volumetric flow rate at actual temperature and pressure, acfh.

T_{Std}=Standard temperature=528 °R.

T_{Stack}=Flue gas temperature at flow monitor location, °R, where °R=460+°F.

P_{Stack}=The absolute flue gas pressure=barometric pressure at the flow monitor location + flue gas static pressure, inches of mercury.

P_{Std}=Standard pressure=29.92 inches of mercury.

74. Appendix F to part 75 is amended by reserving section 7:

7. [Reserved]

* * * * *

Appendix G to Part 75—Determination of CO_2 Emissions

75. Appendix G to part 75, section 2 is amended by revising sections 2.1, 2.2 and 2.3 to read as follows:

* * * * *

2. Procedures for Estimating CO_2 Emissions From Combustion

* * * * *

2.1 Use the following equation to calculate daily CO_2 mass emissions (in tons/day) from the combustion of fossil fuels. Where fuel flow is measured in a common pipe header (i.e., a pipe carrying fuel for multiple units), the owner or operator may use the procedures in section 2.1.2 of appendix D of this part for combining or apportioning emissions, except that the term ''SO_2 mass emissions'' is replaced with the term ''CO_2 mass emissions.''

$$W_{CO_2} = \frac{\left(MW_C + MW_{O_2}\right) \times W_C}{2{,}000\, MW_C} \quad \text{(Eq. G–1)}$$

Where:

Wco2=CO_2 emitted from combustion, tons/day.

MW_c=Molecular weight of carbon (12.0).

MW_{o2}=Molecular weight of oxygen (32.0)

W_C=Carbon burned, lb/day, determined using fuel sampling and analysis and fuel feed rates. Collect at least one fuel sample during each week that the unit combusts coal or oil, one sample per each shipment for diesel fuel, and one fuel sample each month the unit combusts gaseous fuels. Collect coal samples from a location in the fuel handling system that provides a sample representative of the fuel bunkered or consumed during the week. Determine the carbon content of each fuel sampling using one of the following methods: ASTM D3178–89 for coal; ASTM D5291–92 ''Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants,'' ultimate analysis of oil, or computations based upon ASTM D3238–90 and either ASTM D2502–87 or ASTM D2503–82 (Reapproved 1987) for oil; and computations based on ASTM D1945–91 or ASTM D1946–90 for gas. Use daily fuel feed rates from company records for all fuels and the carbon content of the most recent fuel sample under this section to determine tons of carbon per day from combustion of each fuel. (All ASTM methods are incorporated by reference under § 75.6). Where more than one fuel is combusted during a calendar day, calculate total tons of carbon for the day from all fuels.

2.2 For an affected coal-fired unit, the estimate of daily CO_2 mass emissions given by Equation G–1 may be adjusted to account for carbon retained in the ash using the procedures in either section 2.2.1 through 2.2.3 or section 2.2.4 of this appendix.

* * * * *

2.3 In lieu of using the procedures, methods, and equations in section 2.1 of this appendix, the owner or operator of an affected gas-fired unit as defined under § 72.2 of this chapter may use the following equation and records of hourly heat input to estimate hourly CO_2 mass emissions (in tons).

$$W_{CO_2} = \left(\frac{F_C \times H \times U_f \times MW_{CO_2}}{2000} \right) \qquad \text{(Eq. G–4)}$$

(Eq.G–4)

Where:

WCO_2=CO_2 emitted from combustion, tons/hr.

Fc=Carbon-based F-factor, 1,040 scf/mmBtu for natural gas; 1,420 scf/mm/btu for crude, residual, or distillate oil.

H = Hourly heat input in mmBtu, as calculated using the procedures in section 5 of appendix F of this part.

Uf=1/385 scf CO2/lb-mole at 14.7 psia and 68 °F.

* * * * *

76. Appendix G to part 75, section 3 is amended by revising the introductory paragraph; by revising section 3.1.2 before the equation and the definition of the variable ''W_{SO2}''; and by adding Equation G–7 and definitions to section 3.1.2 to read as follows:

3. Procedures for Estimating CO_2 Emissions From Sorbent

When the affected unit has a wet flue gas desulfurization system, is a fluidized bed boiler, or uses other emission controls with sorbent injection, use either a CO_2 continuous emission monitoring system or an O_2 monitor and a flow monitor, or use the procedures, methods, and equations in sections 3.1 through 3.2 of this appendix to determine daily CO_2 mass emissions from the sorbent (in tons).

3.1 * * *

3.1.1 * * *

3.1.2 In lieu of using Equation G–5, any owner or operator who operates and maintains a certified SO_2-diluent continuous emission monitoring system (consisting of an SO_2 pollutant concentration monitor and an O_2 or CO_2 diluent gas monitor), for measuring and recording SO_2 emission rate (in lb/mmBtu) at the outlet to the emission controls and who uses the applicable procedures, methods, and equations in § 75.15 of this part to estimate the SO_2 emissions removal efficiency of the emission controls, may use the following equations to estimate daily CO_2 mass emissions from sorbent (in tons).

(Eq. G–6)

where:

* * * * *

W_{SO2}=Sulfur dioxide removed, lb/day, as calculated below using Eq. G–7.

* * * * *

and

$$W_{SO_2} = SO_{2o} \frac{\%R}{(100 - \%R)} \qquad \text{(Eq. G–7)}$$

(Eq. G–7)

where:

WSO_2=Weight of sulfur dioxide removed, lb/day.

SO_{2o}=SO_2 mass emissions monitored at the outlet, lb/day, as calculated using the equations and procedures in section 2 of appendix F of this part.

%R=Overall percentage SO_2 emissions removal efficiency, calculated using Equations 1 through 7 in § 75.15 using daily instead of annual average emission rates.

* * * * *

Appendix J to Part 75—Compliance Dates for Revised Recordkeeping Requirements and Missing Data Procedures

77. Appendix J to part 75 is added to read as follows:

1. *Recordkeeping Requirements*

The owner or operator shall meet the recordkeeping requirements of subpart F of this part by following either §§ 75.50, 75.51 and 75.52 or §§ 75.54, 75.55 and 75.56, from July 17, 1995 through December 31, 1995. On or after January 1, 1996, the owner or operator shall meet the recordkeeping requirements of subpart F of this part by meeting the requirements of §§ 75.54, 75.55, and 75.56.

2. *Missing Data Substitution Procedures*

The owner or operator shall meet the missing data substitution requirements for carbon dioxide (CO_2) and heat input by following either §§ 75.35 and 75.36 or sections 4.3.1 through 4.3.3, section 4.4.3 and sections 5.3 through 5.4 of appendix F of this part from July 17, 1995 through December 31, 1995. The owner or operator shall meet the missing data substitution requirements for fuel flowmeters in appendix D of this part by following either section 2.4.3.1 or sections 2.4.3.2 and 2.4.3.3 of appendix D of this part from July 17, 1995 through December 31, 1995. On or after January 1, 1996, the owner or operator shall meet the missing data substitution requirements for CO_2 concentration, that input and fuel flowmeters by meeting the requirements of §§ 75.35 and 75.36 and sections 2.4.3.2 through 2.4.3.3 of appendix D of this part.

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