

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[EPA-HQ-OAR-2002-0071; FRL-8568-7]

RIN 2060-AP13

**Update of Continuous Instrumental Test Methods:
Technical Amendments**

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is taking final action to correct errors in a final rule published May 15, 2006, that updated five continuous instrumental test methods. As published, the rule contained inadvertent errors and provisions that needed to be clarified. We published a direct final rule with a parallel proposed rule on September 7, 2007 to correct the errors and to add clarifying language. However, we received an adverse comment on the direct final rule, and it was subsequently withdrawn on November 5, 2007. This action finalizes the parallel proposal. In this final rule, EPA corrects errors, clarifies certain provisions, and responds to the adverse comment received on the direct final rule published on September 7, 2007.

DATES: This final rule is effective on [Insert date of publication in the Federal Register].

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2002-0071. All documents in the docket are listed on the www.regulations.gov web site. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through www.regulations.gov or in hard copy at the Update of Continuous Instrumental Test Methods Docket, Docket ID No. EPA-OAR-2002-0071, EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m. Monday through Friday excluding legal holidays. The Docket telephone number is (202) 566-1742. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744.

FOR FURTHER INFORMATION CONTACT: Mr. Foston Curtis, Air Quality Assessment Division, Office of Air Quality Planning and Standards (E143-02), Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number (919) 541-1063; fax number (919) 541-0516; email address: curtis.foston@epa.gov.

SUPPLEMENTARY INFORMATION:

Table of Contents

- I. Does This Action Apply to Me?
- II. Where Can I Obtain a Copy of This Action?
- III. Background
- IV. This Action
 - A. Method 3A - 40 CFR Part 60, Appendix A-1
 - B. Method 6C - 40 CFR Part 60, Appendix A-4
 - C. Method 7E - 40 CFR Part 60, Appendix A-4
 - D. Method 20 - 40 CFR Part 60, Appendix A-7
- V. Public Comments on the Proposed Rule
- VI. Judicial Review
- VII. Statutory and Executive Order Reviews
 - A. Executive Order 12866: Regulatory Planning and Review
 - B. Paperwork Reduction Act
 - C. Regulatory Flexibility Act
 - D. Unfunded Mandates Reform Act
 - E. Executive Order 13132: Federalism
 - F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
 - G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
 - H. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use
 - I. National Technology Transfer and Advancement Act
 - J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
 - K. Congressional Review Act

I. Does This Action Apply to Me?

This rule applies to certain sources that are subject to New Source Performance Standards (40 CFR part 60), are required to conduct continuous emission monitoring pursuant to 40 CFR Part 75, or are subject to other regulations that require the use of Method 3A, of Appendix A-1, Methods 6C, 7E of Appendix A-4, and Method 20 of Appendix A-7 to 40 CFR Part 60.

Regulated Entities. Categories and entities potentially affected include the following:

Category	NAICS^a	Examples of Regulated Entities
Industry	332410	Fossil Fuel Steam Generators
Industry	332410	Industrial, Commercial, Institutional Steam Generating Units
Industry	332410	Electric Generating Units
Industry	333611	Stationary Gas Turbines
Industry	324110	Petroleum Refineries
Industry	562213	Municipal Waste Combustors
Industry	322110	Kraft Pulp Mills
Industry	325188	Sulfuric Acid Plants

^aNorth American Industry Classification System.

This table is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be affected by this action. This table lists examples of the types of entities EPA is now aware could potentially be affected by the final rule. Other types of entities not listed could also be affected. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

II. Where Can I Obtain A Copy of this Action?

In addition to being available in the docket, an electronic copy of this rule will also be available on the Worldwide Web (www) through the Technology Transfer Network (TTN). Following the Administrator's signature, a copy of the final rule will be placed on the TTN's policy and guidance page for newly proposed or promulgated rules at <http://www.epa.gov/ttn/oarpg>. The TTN provides information and technology exchange in various areas of air pollution control.

III. Background

Methods 3A, 6C, 7E, 10, and 20 measure oxygen, carbon dioxide, sulfur dioxide, nitrogen oxides, and carbon monoxide emissions from stationary sources. They are prescribed for use in determining compliance with a number of Federal, State, and Local regulations. The EPA published updates to simplify, harmonize, and update these test methods on May 15, 2006 (71 FR 28081). The rule promulgating these updates became effective August 14, 2006. As published, the rule contained inadvertent errors and provisions that needed clarification.

On September 7, 2007, EPA simultaneously published a proposed rule (72 FR 51392) and a direct final rule (72 FR 51365) to correct errors and clarify certain provisions in the May 15, 2006 rule. Because EPA received one adverse comment during the public comment period, EPA withdrew the direct final rule on November 5, 2007 (72 FR 62414). EPA is taking final action on

the corrections and clarifications proposed for approval on September 7, 2007, and is responding to the adverse comment received in response to that proposal.

IV. This Action

In this final rule, EPA corrects errors and clarifies portions of the May 15, 2006 rule to reflect the intent of the rule and to make it more understandable.

Specifically, EPA is taking the following actions:

A. Method 3A - 40 CFR Part 60, Appendix A-1

1. We are clearly stating that pre-cleaned or scrubbed air may be used for the high-level calibration gas provided no interfering gases are present.

2. An incorrect reference in Section 8.1 to Section 8.2 of Method 3 for sampling to determine gas molecular weight is corrected to reference Section 8.2.1 of Method 3.

B. Method 6C - 40 CFR Part 60, Appendix A-4

In Section 6.2, a reference to Section 6.2.8.1 for dual-range analyzers is expanded to include Section 6.2.8.2 which also applies.

C. Method 7E - 40 CFR Part 60, Appendix A-4

1. Under the descriptions for calibration gases in Section 3.3, the quality of zero gas allowed for instrument calibration is clarified. The current requirement is that all calibration gases be of EPA traceability protocol quality. However, the

traceability protocol does not have a specification for zero gas. Therefore, we are adopting the specification for "zero air material" in 40 CFR 72.2 for zero gas in place of the traceability protocol.

2. In Section 3.4, we recommend the instrument calibration span be chosen such that emission concentrations are between 20 to 100 percent of the calibration span, "to the extent practicable." We are adding a note, as an example, that meeting this 20 to 100 percent criterion may not be practicable when emissions are low relative to the emission limit and the purpose of the test is to show compliance with the emission limit.

3. Section 3.9 is clarified to note that drift is the difference between the pre- and post-run system bias checks instead of the difference between the measurement system readings for the pre- and post-run bias checks.

4. Section 3.12 is corrected to remove erroneous citations to 40 CFR 53.55 and 53.56 which have nothing to do with the manufacturer's stability test (MST).

5. In Section 6.2.2, we are specifically stating that the particulate media must be included in the system bias test only when using out-of-stack filters.

6. In Section 6.2.6, the description of the calibration gas manifold is clarified to note that blocking the sample flow is not necessary when in direct calibration mode, as suggested in

the current method, but the calibration gas may simply supply an excess of calibration gas through the system.

7. The method implies that all analyzers with calibration spans of 20 ppmv or less are required to perform the MST. In Section 6.2.8.2, we are clarifying the MST requirement to note that it is only required for those analyzers that are routinely calibrated with a calibration span of 20 ppmv or less.

8. The new converter efficiency check that was added in Section 16.2.2 requires the nitrogen dioxide (NO_2) test gas be of EPA traceability protocol quality. Subsequent discussions with the National Institute of Standards and Technology (NIST) concerning the quality of the NIST NO_2 standard revealed that this standard contains small but consistent amounts of nitric acid (HNO_3). Some converters may not be able to completely convert this HNO_3 to nitric oxide (NO) for analysis. There are also concerns about the cost and stability of certified NO_2 gas over time. We are, therefore, dropping the new requirement that the converter efficiency gas be of EPA traceability protocol quality and reverting to the previous requirement that the gas be of a manufacturer-certified concentration. In addition, for this converter check procedure, the gas is required to be in the 40 to 60 ppmv range while the two alternative procedures require gas in the mid- to high-calibration range. We are dropping the 40 to 60 ppmv requirement in favor of recommending the

concentration be in the mid- to high-calibration range in order to keep the three procedures consistent. Subsequent references to the 40 to 60 ppmv requirement have been deleted from the method.

9. In Section 7.2, we are clearly stating that the appropriate test gases listed in Table 7E-3, or others not listed that can potentially interfere, as noted elsewhere, must be used for the test. We are also making it clear that the gases used should be manufacturer-certified but are not required to be prepared by the EPA traceability protocol.

10. In Section 8.1.2, we are explicitly stating that the required stratification test is to be performed at each test site except for small stacks that are less than 4 inches in diameter.

11. In Section 8.2.1, we are making it clear that testers must obtain a certificate from the gas manufacturer documenting the quality of the calibration gas.

12. In Section 8.2.4, we are clearly stating that the converter efficiency test may be performed either before or after a test or after a series of tests.

13. In Section 8.2.7, paragraph (1) is reworded to add clarity to the interference test, and paragraph (2) is corrected to note that the interference test is valid for the life of the

instrument unless major components are replaced with different model parts.

14. In the sample traversing procedure in Section 8.4, we delete redundant language in paragraphs (1) and (2).

15. In paragraph (1) of Section 8.5, we clarify the handling of failed post-run bias checks by removing unnecessary wording.

16. In Section 10.0, we clearly state that analyzers which measure NO and NO₂ *without using a converter* must be calibrated with both NO and NO₂. The current wording is not clear to some users.

17. In Section 12.1, we are revising certain definitions to reflect the corrections being made to the calculations.

18. In Section 12.4, we correct the system calibration error equation by adding a term for the dilution factor.

19. In Section 12.6, we add a missing equation for calculating sample concentration when a non-zero gas is used as the low-level calibration gas.

20. Section 12.9 we replace the erroneous equation added in the updates rule with the one traditionally used by the method.

21. In Section 12.11, we correct the equation for calculating the spike recovery.

22. In Section 13.5, we are adding the 2 percent limit for the alternative converter efficiency test.

23. In Section 16.2.2, we are deleting the procedures in paragraphs (2) and (3) because they are not needed for the test and are confusing.

24. In Section 16.3, the erroneous references to 40 CFR 53.55 and 53.56 are removed; only 53.53 is followed for the MST. A note is added to clarify that alternative procedures or documentation of instrument stability are acceptable.

25. In Table 7E-3, the title is edited to note that the table contains example interference gases and concentrations. We are removing a table footnote instructing dilution extractive systems to use the hot wet concentrations because it may not be applicable in all cases. In its place, a footnote is added to remind the tester to use the highest gas concentration expected at test sites for the interference test.

26. In Table 7E-5, we correct the typographical error listing the NO_x concentration at “.80% of calibration span” to read “80% of calibration span.” We have removed the note to evaluate each model by the MST at least quarterly or once per 50 production units because it is not necessary.

D. Method 20 - 40 CFR Part 60, Appendix A-7

1. In Section 8.4, we are adding a minimum sample run time of 21 minutes.

V. Public Comments on the Proposed Rule

Two public comment letters were received on the direct final rule that was published on September 7, 2007. Because the comments was considered adverse, the direct final rule was withdrawn on November 5, 2007 (72 FR 62414). One commenter identified an error in the definition of "system bias." We inadvertently proposed to change the definition to note that system bias is calculated from the difference between the system calibration response and the manufacturer certified gas concentration and not from the difference between the system calibration response and the direct calibration responses. Therefore, we are not revising the definition of system bias as indicated in the September 7, 2007, notice.

Another commenter asked that we amend the suggested gas concentrations that were proposed for the Method 7E converter check to make it clear that gases in the 40 to 60 ppm range were not the only ones allowed but that other concentrations were acceptable if they were more appropriate for the source conditions. We agree and have made this change in the final rule.

Another error in the published equation for calculating system calibration error was pointed out. The dilution factor was not in the correct place in Equation 7E-3. This has been corrected.

VI. Judicial Review

Under section 307(b)(1) of the Clean Air Act (CAA), judicial review of this final rule is available by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by [Insert date 60 days from date of publication in the Federal Register]. Under section 307(d)(7)(B) of the CAA, only an objection to this final rule that was raised with reasonable specificity during the period for public comment can be raised during judicial review. Moreover, under section 307(b)(2) of the CAA, the requirements established by this action may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce these requirements.

VII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

This action is not a "significant regulatory action" under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is, therefore, not subject to review under the Executive Order.

B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. Burden is defined at 5 CFR 1320.3(b). These amendments do not add information collection requirements beyond those currently required under the applicable regulation. The

amendments being made correct technical inaccuracies in the existing testing methodology.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) a small business whose parent company has fewer than 100 or 1,000 employees, or fewer than 4 billion kilowatt-hr per year of electricity usage, depending on the size definition for the affected North American Industry Classification System code; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this final rule on small entities, I certify that this action will not have a

significant economic impact on a substantial number of small entities. This final rule will not impose any requirements on small entities because it does not impose any additional regulatory requirements.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why

that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed, under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this final rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year, nor does this rule significantly or uniquely impact small governments, because it contains no requirements that apply to such governments or impose obligations upon them. Thus, this rule is not subject to the requirements of sections 202 and 205 of the UMRA. EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no requirements that apply to such governments or impose obligations upon them. Thus, this rule is

not subject to the requirements of sections 202 and 205 of the UMRA.

E. Executive Order 13132: Federalism

Executive Order 13132 entitled "Federalism" (64 FR 43255, August 10, 1999) requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. The amendments in this rule will benefit State and local governments by clarifying and correcting provisions they currently implement. No added responsibilities or increase in implementation efforts or costs for State and local governments are being added in this action. Thus, Executive Order 13132 does not apply to this rule.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Executive Order 13175 entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000) requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." This final rule does not have tribal implications as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this rule.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

EPA interprets EO 13045 (62 F.R. 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

H. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive Order 13211, "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not involve technical standards. Therefore, EPA did not consider the use of any voluntary consensus standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

Executive Order 12898 (59 FR 7629 (Feb. 16, 1994)) establishes Federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This final rule does not relax the control measures on sources regulated by the rule and, therefore, will not cause emissions increases from these sources.

K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will

submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A Major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective [insert date of publication in the Federal Register].

List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedures, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: May 15, 2008

Stephen L. Johnson,
Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 60 - STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

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

Authority: 23 U.S.C. 101; 42 U.S.C. 7401-7671q.

Appendix A-2 - [Amended]

- 2. Amend Method 3A as follows:
 - a. Add a sentence after the second sentence of Section 7.1.
 - b. Revise the second sentence in Section 8.1.

Method 3A - Determination of Oxygen and Carbon Dioxide

Concentrations in Emissions From Stationary Sources

(Instrumental Analyzer Procedure)

* * * * *

7.1 *Calibration Gas.* * * * Pre-cleaned or scrubbed air may be used for the O₂ high-calibration gas provided it does not contain other gases that interfere with the O₂ measurement.

* * * * *

8.1. *Sampling Site and Sampling Points.* * * *

In that case, you may use single-point integrated sampling as described in Section 8.2.1 of Method 3.

* * * * *

Appendix A-4 - [Amended]

3. Amend Method 6C by revising the last sentence in Section 6.2 to read as follows:

Method 6C - Determination of Sulfur Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure)

* * * * *

6.2 * * * The low-range and dual-range analyzer provisions in Sections 6.2.8.1 and 6.2.8.2 of Method 7E apply.

* * * * *

4. Amend Method 7E as follows:
- a. Revise Sections 3.3, 3.4, and 3.9.
 - b. Revise Section 3.12 by removing the third sentence and adding two new sentences.
 - c. Revise Section 6.2.2.
 - d. Revise the second sentence in Section 6.2.6.
 - e. Revise Section 6.2.8.2.
 - f. Add a sentence after the second sentence in Section 7.1.
 - g. Revise Section 7.1.4.
 - h. Revise Section 7.2.
 - i. Add three sentences to the beginning of Section 8.1.2.
 - j. Revise the second sentence in Section 8.2.1.
 - k. Revise the first sentence in Section 8.2.4.
 - l. Revise Section 8.2.4.1.

m. Revise the first and second sentences in paragraph (1) and the second sentence in paragraph (2) of Section 8.2.7.

n. Revise paragraphs (1) and (2) in Section 8.4.

o. Revise the introductory paragraph and paragraph (1) of Section 8.5.

p. In Section 9.0, revise the table entitled "Summary Table of QA/QC" by amending the entry for "M" "System Performance" "NO₂-NO conversion efficiency" "≥90% of certified test gas concentration" "before each test."

q. Revise the last sentence in paragraph (1) of Section 10.0.

r. Add definitions for "C_{native}," "C_{OA}," and "DF" in alphabetical order to Section 12.1.

s. Remove the definition for "NO_{final}" in Section 12.1.

t. Revise the definitions of "C₀" and "SB_f" in Section 12.1.

u. Revise Section 12.4.

v. Revise Sections 12.6 and 12.9.

w. Revise Equation 7E-12 in Section 12.11.

x. Revise Section 13.5.

y. Revise the third sentence in paragraph (1) of Section 16.2.2.

z. Remove and reserve paragraph (2) and remove paragraph (3) of Section 16.2.2.

aa. Revise Section 16.3.

bb. Revise Table 7E-3.

cc. Revise Table 7E-5.

**Method 7E - Determination of Nitrogen Oxides Emissions From
Stationary Sources (Instrumental Analyzer Procedure)**

* * * * *

3.3 *Calibration Gas* means the gas mixture containing NO_x at a known concentration and produced and certified in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards," September 1997, as amended August 25, 1999, EPA-600/R-97/121 or more recent updates. The tests for analyzer calibration error, drift, and system bias require the use of calibration gas prepared according to this protocol. If a zero gas is used for the low-level gas, it must meet the requirements under the definition for "zero air material" in 40 CFR 72.2 in place of being prepared by the traceability protocol.

* * * * *

3.4 *Calibration Span* means the upper limit of the analyzer's calibration that is set by the choice of high-level calibration gas. No valid run average concentration may exceed the calibration span. To the extent practicable, the measured emissions should be between 20 to 100 percent of the selected calibration span. This may not be practicable in some cases of

low-concentration measurements or testing for compliance with an emission limit when emissions are substantially less than the limit. In such cases, calibration spans that are practicable to achieving the data quality objectives without being excessively high should be chosen.

* * * * *

3.9 *Drift* means the difference between the pre-and post-run system bias (or system calibration error) checks at a specific calibration gas concentration level (i.e. low-, mid- or high-).

3.12 * * * An MST subjects the analyzer to a range of line voltages and temperatures that reflect potential field conditions to demonstrate its stability following procedures similar to those provided in 40 CFR 53.23. Ambient-level analyzers are exempt from the MST requirements of Section 16.3.

* * *

* * * * *

6.2.2 *Particulate Filter*. An in-stack or out-of-stack filter. The filter must be made of material that is non-reactive to the gas being sampled. The filter media for out-of-stack filters must be included in the system bias test. The particulate filter requirement may be waived in applications where no significant particulate matter is expected (e.g., for emission testing of a combustion turbine firing natural gas).

* * * * *

6.2.6 Calibration Gas Manifold. * * *

In system calibration mode, the system should be able to flood the sampling probe and vent excess gas. * * *

* * * * *

6.2.8.2 Low Concentration Analyzer. When an analyzer is routinely calibrated with a calibration span of 20 ppmv or less, the manufacturer's stability test (MST) is required. See Table 7E-5 for test parameters.

* * * * *

7.1 Calibration Gas. * * *

If a zero gas is used for the low-level gas, it must meet the requirements under the definition for "zero air material" in 40 CFR 72.2.

* * *

7.1.4 Converter Efficiency Gas. *What reagents do I need for the converter efficiency test?* The converter efficiency gas is a manufacturer-certified gas with a concentration sufficient to show NO₂ conversion at the concentrations encountered in the source. A test gas concentration in the 40 to 60 ppm range is suggested, but other concentrations may be more appropriate to specific sources. For the test described in Section 8.2.4.1, NO₂ is required. For the alternative converter efficiency tests in Section 16.2, NO is required.

* * * * *

7.2 *Interference Check.* What reagents do I need for the interference check? Use the appropriate test gases listed in Table 7E-3 or others not listed that can potentially interfere (as indicated by the test facility type, instrument manufacturer, etc.) to conduct the interference check. These gases should be manufacturer certified but do not have to be prepared by the EPA traceability protocol.

* * * * *

8.1.2 *Determination of Stratification.* Perform a stratification test at each test site to determine the appropriate number of sample traverse points. If testing for multiple pollutants or diluents at the same site, a stratification test using only one pollutant or diluent satisfies this requirement. A stratification test is not required for small stacks that are less than 4 inches in diameter * * *

* * * * *

8.2.1 *Calibration Gas Verification.* * * * Obtain a certificate from the gas manufacturer documenting the quality of the gas. * * *

* * * * *

8.2.4 *NO₂ to NO Conversion Efficiency.* Before or after each field test, you must conduct an NO₂ to NO conversion

efficiency test if your system converts NO₂ to NO before analyzing for NO_x. You may risk testing multiple facilities before performing this test provided you pass this test at the conclusion of the final facility test. A failed final conversion efficiency test in this case will invalidate all tests performed subsequent to the test in which the converter efficiency test was passed. * * *

8.2.4.1 Introduce NO₂ converter efficiency gas to the analyzer in direct calibration mode and record the NO_x concentration displayed by the analyzer. Calculate the converter efficiency using Equation 7E-7 in Section 12.7. The specification for converter efficiency in Section 13.5 must be met. The user is cautioned that state-of-the-art NO₂ calibration gases may have limited shelf lives, and this could affect the ability to pass the 90 percent conversion efficiency requirement.

8.2.7 *Interference Check.* * * *

(1) You may introduce the appropriate interference test gases (that are potentially encountered during a test, see examples in Table 7E-3) into the analyzer separately or as mixtures. Test the analyzer with the interference gas alone at the highest concentration expected at a test source and again with the interference gas and NO_x at a representative NO_x test concentration. * * *

(2) * * * This interference test is valid for the life of the instrument unless major analytical components (e.g., the detector) are replaced with different model parts. If major components are replaced with different model parts, the interference gas check must be repeated before returning the analyzer to service.

* * * * *

8.4 *Sample Collection.*

(1) Position the probe at the first sampling point. Purge the system for at least two times the response time before recording any data. Then, traverse all required sampling points, sampling at each point for an equal length of time and maintaining the appropriate sample flow rate or dilution ratio (as applicable). You must record at least one valid data point per minute during the test run.

(2) Each time the probe is removed from the stack and replaced, you must recondition the sampling system for at least two times the system response time prior to your next recording. If the average of any run exceeds the calibration span value, that run is invalid.

* * * * *

8.5 *Post-Run System Bias Check and Drift Assessment.*

How do I confirm that each sample I collect is valid? After each run, repeat the system bias check or 2-point system

calibration error check (for dilution systems) to validate the run. Do not make adjustments to the measurement system (other than to maintain the target sampling rate or dilution ratio) between the end of the run and the completion of the post-run system bias or system calibration error check. Note that for all post-run system bias or 2-point system calibration error checks, you may inject the low-level gas first and the upscale gas last, or vice-versa. You may risk sampling for multiple runs before performing the post-run bias or system calibration error check provided you pass this test at the conclusion of the group of runs. A failed final test in this case will invalidate all runs subsequent to the last passed test.

(1) If you do not pass the post-run system bias (or system calibration error) check, then the run is invalid. You must diagnose and fix the problem and pass another calibration error test (Section 8.2.3) and system bias (or 2-point system calibration error) check (Section 8.2.5) before repeating the run. Record the system bias (or system calibration error) results on a form similar to Table 7E-2.

* * * * *

9.0 Quality Control

Summary Table of QA/QC

Status	Process or Element	QA/QC Specification	Acceptance Criteria	Checking Frequency
* M *	* System Performance *	* NO ₂ -NO conversion efficiency *	* ≥ 90% of certified test gas concentration *	* Before or after each test *

* * *

10.0 Calibration and Standardization

* * *

(1) * * * Analyzers that measure NO and NO₂ separately without using a converter must be calibrated with both NO and NO₂.

* * * * *

12.1 Nomenclature. * * *

C_{native} = NO_x concentration in the stack gas as calculated in Section 12.6, ppmv.

* * *

C_0 = Average of the initial and final system calibration bias (or 2-point system calibration error) check responses from the low-level (or zero) calibration gas, ppmv.

C_{OA} = Actual concentration of the low-level calibration gas, ppmv.

* * *

DF = Dilution system dilution factor or spike gas dilution factor, dimensionless.

* * *

SB_{final} = Post-run system bias, percent of calibration span.

* * * * *

12.4 System Calibration Error. Use Equation 7E-3 to calculate the system calibration error for dilution systems. Equation 7E-3 applies to both the initial 3-point system calibration error test and the subsequent 2-point calibration error checks between test runs. In this equation, the term "C_s" refers to the diluted calibration gas concentration measured by the analyzer.

$$SCE = \frac{(C_S \times DF) - C_V}{C_S} \times 100 \quad \text{Eq. 7E-3}$$

* * * * *

12.6 Effluent Gas Concentration. For each test run, calculate C_{avg}, the arithmetic average of all valid NO_x concentration values (e.g., 1-minute averages). Then adjust the value of C_{avg} for bias using Equation 7E-5a if you use a non-zero gas as your low-level calibration gas, or Equation 7E-5b if you use a zero gas as your low-level calibration gas.

$$C_{Gas} = (C_{Avg} - C_M) \frac{C_{MA} - C_{OA}}{C_M - C_O} + C_{MA} \quad \text{Eq. 7E-5a}$$

$$C_{Gas} = (C_{Avg} - C_O) \frac{C_{MA}}{C_M - C_O} \quad \text{Eq. 7E-5b}$$

* * * * *

12.9 *Alternative NO₂ Converter Efficiency.* If the alternative procedure of Section 16.2.2 is used, determine the NO_x concentration decrease from NO_{xPeak} after the minimum 30-minute test interval using Equation 7E-9. This decrease from NO_{xPeak} must meet the requirement in Section 13.5 for the converter to be acceptable.

$$\% \text{ Decrease} = \frac{NO_{xPeak} - NO_{xFinal}}{NO_{xPeak}} \times 100 \quad \text{Eq. 7E-9}$$

* * * * *

12.11 *Calculated Spike Gas Concentration and Spike Recovery for the Example Alternative Dynamic Spiking Procedure in Section 16.1.3.* * * *

$$R = \frac{DF (C_{ss} - C_{native}) + C_{native}}{C_{spike}} \times 100 \quad \text{Eq. 7E-12}$$

* * * * *

13.5 *NO₂ to NO Conversion Efficiency Test (as applicable).* The NO₂ to NO conversion efficiency, calculated according to Equation 7E-7, must be greater than or equal to 90 percent. The alternative conversion efficiency check, described in Section

16.2.2 and calculated according to Equation 7E-9, must not result in a decrease from NO_{XPeak} by more than 2.0 percent.

* * * * *

16.2.2 Tedlar Bag Procedure. * * * Fill the remainder of the bag with mid- to high-level NO in nitrogen (or other appropriate concentration) calibration gas.

* * * * *

16.3 Manufacturer's Stability Test. A manufacturer's stability test is required for all analyzers that routinely measure emissions below 20 ppmv and is optional but recommended for other analyzers. This test evaluates each analyzer model by subjecting it to the tests listed in Table 7E-5 following procedures similar to those in 40 CFR 53.23 for thermal stability and insensitivity to supply voltage variations. If the analyzer will be used under temperature conditions that are outside the test conditions in Table B-4 of Part 53.23, alternative test temperatures that better reflect the analyzer field environment should be used. Alternative procedures or documentation that establish the analyzer's stability over the appropriate line voltages and temperatures are acceptable.

* * * * *

Table 7E-3. Example Interference Check Gas Concentrations

Potential Interferent Gas ¹	Concentrations ²	
	Hot Wet	Dried
CO₂	5 and 15%	5 and 15%
H₂O	25%	1 %
NO	15 ppmv	15 ppmv
NO₂	15 ppmv	15 ppmv
N₂O	10 ppmv	10 ppmv
CO	50 ppmv	50 ppmv
NH₃	10 ppmv	10 ppmv
CH₄	50 ppmv	50 ppmv
SO₂	20 ppmv	20 ppmv
H₂	50 ppmv	50 ppmv
HCl	10 ppmv	10 ppmv

- 1) Any applicable gas may be eliminated or tested at a reduced level if the manufacturer has provided reliable means for limiting or scrubbing that gas to a specified level.
- 2) As Practicable, gas concentrations should be the highest expected at test sites.

* * * * *

Table 7E-5. Manufacturer Stability Test

TEST DESCRIPTION	Acceptance Criteria (Note 1)
Thermal Stability	Temperature range when drift does not exceed 3.0% of analyzer range over a 12-hour run when measured with NO _x present @ 80% of calibration span.
Fault Conditions	Identify conditions which, when they occur, result in performance which is not in compliance with the Manufacturer's Stability Test criteria. These are to be indicated visually or electrically to alert the operator of the problem.
Insensitivity to Supply Voltage Variations	±10.0% (or manufacturers alternative) variation from nominal voltage must produce a drift of ≤ 2.0% of calibration span for either zero or concentration ≥ 80% NO _x present
Analyzer Calibration Error	For a low-, medium-, and high- calibration gas, the difference between the manufacturer certified value and the analyzer response in direct calibration mode, no more than 2.0% of calibration span

Note 1: If the instrument is to be used as a Low Range analyzer, all tests must be performed at a calibration span of 20 ppm or less.

* * * * *

Appendix A-7 - [Amended]

5. Amend Method 20 by adding a sentence to the end of Section 8.4 to read as follows:

**Method 20 - Determination of Oxygen and Carbon Dioxide
Concentrations in Emissions From Stationary Sources
(Instrumental Analyzer Procedure)**

* * * * *

8.4 *Sample Collection.* * * *

A test run must have a duration of at least 21 minutes.

* * * * *