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Part II

Environmental Protection Agency

40 CFR Parts 51, 60, 61, et al.
Revisions to Test Methods and Testing Regulations; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51, 60, 61, and 63

[EPA–HQ–OAR–2010–0114; FRL–9501–3]

RIN 2060–AQ01

Revisions to Test Methods and Testing Regulations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This action proposes editorial and technical corrections necessary for source testing of emissions and operations. The revisions include the addition of alternative equipment and methods as well as corrections to technical and typographical errors. We also solicit public comment on potential changes to the current procedures for determining emission stratification.

DATES: Comments must be received on or before March 9, 2012.

Public Hearing. If anyone contacts the EPA by January 19, 2012 requesting to speak at a public hearing, a hearing will be held on February 8, 2012.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OAR–2010–0114, by one of the following methods:

- *www.regulations.gov:* Follow the on-line instructions for submitting comments.
- *Email: a-and-r-docket@epa.gov.*
- *Fax:* (202) 566–9744.
- *Mail:* Revisions to Test Methods and Testing Regulations, Docket No. EPA–HQ–OAR–2010–0114, Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave. NW., Washington, DC 20460. Please include two copies.
- *Hand Delivery:* Docket No. EPA–HQ–OAR–2010–0114, EPA Docket Center, Public Reading Room, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–HQ–OAR–2010–0114. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *www.regulations.gov* or email. The *www.regulations.gov* Web site is an ''anonymous access'' system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through *www.regulations.gov,* your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment as well as with any disk or CD–ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *www.regulations.gov* index. 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, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *www.regulations.gov* or in hard copy at the Revisions to Test Methods and Testing Regulations Docket, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460. 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, and the telephone number for the Revisions to Test Methods and Testing Regulations Docket is (202) 566–1742.

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

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

The proposed amendments apply to a large number of industries that are already subject to the current provisions of Parts 51, 60, 61, and 63. Therefore, we have not listed specific affected industries or their North American Industry Classification System (NAICS) codes here. If you have any questions regarding the applicability of this action to a particular entity, consult either the air permitting authority for the entity or your EPA regional representative as listed in 40 CFR 63.13.

B. What should I consider as I prepare my comments for the EPA?

1. *Submitting CBI.* Do not submit this information to the EPA through *http://www.regulations.gov* or email. Clearly mark any of the information that you claim to be CBI. For CBI information in a disk or CD–ROM that you mail to the EPA, mark the outside of the disk or CD–ROM as CBI and then identify electronically within the disk or CD–ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. *Tips for Preparing Your Comments.* When submitting comments, remember to:

- Follow directions—The Agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree, suggest alternatives, and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified.

C. Where can I get a copy of this document?

In addition to being available in the docket, an electronic copy of this proposed rule will also be available on the Worldwide Web (WWW) through the Technology Transfer Network (TTN). Following signature, a copy of this proposed rule will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules at the following address: *http://www.epa.gov/ttn/oarpg/.* The TTN provides information and technology exchange in various areas of air pollution control. A redline/strikeout document comparing the proposed revisions to the appropriate sections of the current rules is located in the docket.

D. How is this document organized?

The supplementary information in this preamble is organized as follows:

II. Background

The EPA catalogs revisions and updates that are needed for test methods, performance specifications, and associated regulations in 40 CFR parts 51, 60, 61, and 63, and proposes the revisions on a 5- to 10-year basis. The last methods update was published as a final rule on October 17, 2000 (65 FR 61744). Many of these needed revisions were brought to our attention by affected parties and end-users. The revisions consist of allowable alternatives that were not previously available, changes that facilitate the use of mercury-free equipment, and updates needed to correct obsolete provisions or add flexibility. Corrections to typographical errors and technical errors in equations and diagrams are also proposed. It is important to note that although numerous technical corrections are being proposed to portions of the subparts in parts 51, 60, 61, and 63, changes are not made to any compliance standard, reporting, or recordkeeping requirement. For this notice, the EPA is only proposing revisions to sections of the subpart pertaining to source testing or monitoring of emissions and operations.

III. Summary of Amendments

A. Appendix M of Part 51

In the introduction of Appendix M of part 51, Methods 3A and 19 would be added to the list of methods not requiring the use of audit samples. Method 3A is a direct measurement instrumental method which the audit program does not evaluate, and Method 19 deals with calculation procedures and not measurement procedures.

B. Method 201A of Appendix M of Part 51

Revisions would be made to the Method 201A published on December 21, 2010. Typographical errors in references to isokinetic sampling rate, source gas temperatures, stack blockage dimensions by the sampling heads, and PM_{10} in Sections 8.3.4(b), 8.3.4.1, 8.7.2.2, and 8.7.5.5(a), respectively, would be corrected. An erroneous reference to Methods 4A and 5 in Section 10.1 when using a standard pitot tube would be corrected to refer to Methods 1 and 2. Section 10.5, which addresses Class A volumetric glassware, would be deleted because it is not needed in the method. For those filters whose weight cannot be weighed to a constant weight in Section 11.2.1, instruction would be added to flag and report the data as a minimum value. It would be noted that the nozzle, front half, and in-stack filter samples need to be speciated into organic and inorganic fractions to be similar to the practice in Method 17. The method would also note that neither Method 17 nor 201A require a separate analysis of the filter for inorganic and organic particulate matter. Method 201A is often used together with Method 202 which requires a separate analysis of inorganic and organic PM. This note would remind testers that a separate analysis is not required for Method 201A. An incorrect term in Equation 9 of Section 12.5 would be corrected. In the nomenclature in Section 12.1, V_b, the volume of aliquot taken for ion chromatography (IC) analysis, would be deleted since no IC analysis is performed.

C. Method 202 of Appendix M of Part 51

Revisions would be made to the Method 202 published on December 21, 2010. In Section 8.5.3.1, the text referring to empty impingers would be deleted because empty impingers are not used. Figures 2 and 3 would be revised to correctly show the first impinger with an extended stem instead of a shortened one to be consistent with the method text, and the condensed moisture and sample portion of the sampling train would be labeled to make it easy to identify. Figures 4, 5, and 6 would be republished because they did not print clearly in the December 21, 2010, publication.

D. General Provisions (Subpart A) Part 60

In the General Provisions of part 60, Methods 3A and 19 would be added to the list of methods not requiring the use of audit samples in § 60.8(gd). Method 3A is a direct measurement instrumental method which the audit program does not evaluate, and Method 19 deals with calculation procedures in lieu of measurement procedures.

A new § 60.8(h) would be added to require that sampling sites be evaluated for cyclonic flow and stratification before testing. Cyclonic flow and gas stratification has not been adequately addressed in the past except for particulate measurement methods. Our experience has been that gaseous pollutant measurements may also be affected by these phenomena. Procedures currently used in Methods 1 and 7E would be referenced for all tests to evaluate the suitability of test locations and give procedures for testing under conditions of gas stratification and cyclonic flow to preclude non-representative sampling.

A new § 60.8(i) would be added to allow the use of Method 205 of 40 CFR part 51, Appendix M, ‘‘Verification of Gas Dilution Systems for Field Instrument Calibrations,’’ as an alternative provision whenever the use of multiple calibration gases is required under Part 60. Method 205 has previously been allowed for different applications on a case-by-case basis. Method 205 reduces the number of cylinder gases needed for a test by allowing lower-concentration gases to be generated from a high-level gas. Section 60.13(d)(1) would be revised to remove the phrase ‘‘automatically, intrinsic to the opacity monitor’’ which was incorrectly inserted into the paragraph in a past revision. The title of an organization in a method that is incorporated by reference would be updated in § 60.17(e), and the edition of the method referred to in § 60.17(e)(1) would be updated to reflect the currently available version.

E. Industrial-Commercial-Institutional Steam Generating Units (Subpart Db) Part 60

In subpart Db, Method 320 would be added as an alternative to the methods for determining nitrogen oxides (NO_X) concentration in § 60.46b(f)(1)(ii), (h)(1) and (2), and sulfur dioxide (SO_2) concentration in § 60.47b(b)(2). The EPA has allowed the use of Method 320 in the past on a case-by-case basis and now believes it is appropriate for general use.

F. Hospital/Medical/Infectious Waste Incinerators (Subpart Ec) Part 60

In subpart Ec, the definition of medical/infectious wastes in § 60.51c would be revised to correct the misspelling of ‘‘cremation.’’

G. Sulfuric Acid Plants (Subpart H) Part 60

In Subpart H, an equation for calculating the SO_2 emission rate in § 60.84(d) would be corrected.

H. Sewage Treatment Plants (Subpart O) Part 60

In subpart O, a reference to Method 209F in § 60.154(b)(5) would be revised to reflect a newer available version of the method (*i.e.,* 2540G).

I. Kraft Pulp Mills (Subpart BB) Part 60

In subpart BB, a typographical error in the equation in § 60.284(c)(3) would be corrected.

J. Stationary Gas Turbines (Subpart GG) Part 60

In subpart GG, the definitions of terms for the equation in § 60.335(b)(l) would be revised to allow the reference combustor inlet absolute pressure to be measured in millimeters of mercury (mm Hg). Using the site barometric pressure gives comparable results to the observed combustor inlet absolute pressure for calculating the mean NO_X emission concentration and would be allowed as an alternative.

K. Lead-Acid Battery Manufacturing Plants (Subpart KK) Part 60

In subpart KK, Method 29 would be added as an alternative to Method 12 in § 60.374(b)(1)and (c)(2) for determining the lead concentration and flow rate of the effluent gas. Method 29 is an accepted method for determining lead under other rules and is appropriate for this subpart as well. Also, an error in the equation for calculating the lead emission concentration in 60.374(b)(2) would be corrected.

L. Metallic Mineral Processing Plants (Subpart LL) Part 60

In subpart LL, an error in the value of the particulate matter standard in § 60.382(a)(1) would be corrected from 0.02 g/dscm to 0.05 g/dscm. An alternative procedure, where a single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval, would be added to § 60.386. This alternative would allow the observer to take readings in a more cost-effective and timely manner than currently allowed.

M. Asphalt Processing and Asphalt Roofing Manufacture (Subpart UU) Part 60

In subpart UU, an error in the value of the particulate matter standard for saturated felt or smooth-surfaced roll roofing in § 60.472(a)(1)(ii) would be corrected from 0.04 kg/Mg to 0.4 kg/Mg.

N. Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (Subpart NNN) Part 60

In subpart NNN, several paragraphs were renumbered in a previous amendment, but conforming changes in sections that referenced these paragraphs were not made. In § 60.660(c)(4) and § 60.665(h)(2) and (3), these references would be corrected.

O. Stationary Compression Ignition Internal Combustion Engines (Subpart IIII) Part 60

In Subpart IIII, the use of Method 1 or 1A for sampling point selection would be dropped, and single-point sampling at the centroid of the exhaust would be added. The exhausts of most regulated engines are too small and not equipped with sampling ports. This makes it difficult to divide the exhaust into multiple sampling-point locations as required by Methods 1 and 1A. Table 7 would be revised to delete the requirement to use Method 1 or 1A.

P. Stationary Spark Ignition Internal Combustion Engines (Subpart JJJJ) Part 60

In Subpart JJJJ, the exhausts of most regulated engines do not contain sampling ports and are too small to be subdivided into multiple sampling-point locations. Table 2 would be revised to delete the requirement to use Method 1 or 1A for determining sampling site and sampling-point location, and instruction would be added to sample at the centroid of the exhaust.

Q. Method 1 of Appendix A–1 of Part 60

In Method 1, Section 11.2.2 would be clarified to note that it specifically applies to gaseous measurements. The provisions in the section for determining exhaust gas stratification would be streamlined to make them consistent with the new stratification provisions in Method 7E. Figures 1–1 and 1–2 would be clarified to note that the horizontal coordinates represent the duct diameters from the sampling point to the flow disturbance and not simply the duct diameters from the flow disturbance. Figure 1–2 would also be corrected to show the proper demarcation between the requirement for 12 and 16 sampling points. The test for the presence or absence of cyclonic flow would be required for all tests instead of recommended at sites suspected of having cyclonic flow.

R. Method 2 of Appendix A–1 of Part 60

In Method 2, a pressure stability specification that has been lacking for the pitot tube leak-check would be added to clearly note the desired stability. An erroneous reference to a Figure 2–6B would be corrected to reference Figure 2–7B. An error in a term in the denominator of Equation 2–7 would be corrected to the average of the square root of delta P rather than the square root of the average delta P. The velocity constant in English units used in Equation 2–7 would be corrected by changing m/sec to ft/sec. The term for absolute temperature in Equations 2–7 and 2–8 would be corrected to represent the average of the absolute temperatures; an inadvertently omitted term would be added to Section 12.1 for the average absolute temperature; and calibrating a barometer against a NIST-traceable barometer would be added as an alternative to calibrating against a mercury barometer to facilitate the use of mercury-free products.

S. Method 2A of Appendix A–1 of Part 60

In Method 2A, calibrating a barometer against a NIST-traceable barometer would be added as an alternative to calibrating against a mercury barometer to facilitate the use of mercury-free products.

T. Method 2B of Appendix A–1 of Part 60

In Method 2B, nomenclature errors would be corrected and the assumed ambient carbon dioxide concentration used in the calculations would be changed from 300 to 380 ppm to closer approximate current ambient levels.

U. Method 2D of Appendix A–1 of Part 60

In Method 2D, calibrating a barometer against a NIST-traceable barometer would be added as an alternative to calibrating against a mercury barometer to facilitate the use of mercury-free products.

V. Method 3A of Appendix A–2 of Part 60

In Method 3A, a redundant sentence noting that pre-cleaned air may be used for the high-level calibration gas would be deleted.

W. Method 4 of Appendix A–3 of Part 60

In Method 4, the English value for the leak rate exceedance in Section 9.1 would be corrected from 0.20 cfm to 0.020 cfm. Method 6A, Method 320, and a calculation using F-factors would be added as alternatives to Method 4 for the moisture determination. These are logical alternatives in cases where Methods 6A and 320 are already being used, and the F-factors approach can save both time and expenses in some cases.

X. Method 5 of Appendix A–3 of Part 60

In Method 5, a clarification would be added that the deionized water used in the analysis of material caught in the impingers must have ≤0.001 percent residue; the factor K would be corrected to K' in Equation 5–13; calibrating a barometer against a NIST-traceable barometer would be added as an alternative to calibrating against a mercury barometer to facilitate the use of mercury-free products; calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer would be added as an alternative to calibrating against a mercury-in-glass thermometer to facilitate the use of mercury-free products; rechecking temperature sensors for the filter holder and metering system after each test has been found to be sufficient and would replace having sensors calibrated within 3 °F; the option to check the probe heater calibration after a test at a single point using a reference thermometer would be added; the use of weather station barometric pressure corrected to testing point elevation would be added as an option to having an on-site barometer; mention of stopcock grease for air-tight impinger seals would be deleted since it is outdated and not often used; a smaller acetone cleanup blank is determined sufficient and a single blank per container would be allowed in place of a blank from each wash bottle; Section 10.3.3 would be clarified as a post-test metering system calibration check rather than a metering system calibration, and an alternative metering check procedure would be added; the Isostack metering system would be noted as an acceptable system for determining sample flow rates; the use of a Teflon filter holder would be allowed without having to obtain the Administrator's approval first; and Reference 13 for post-test calibration would be added to the method.

Y. Method 5A of Appendix A–3 of Part 60

In Method 5A, mercury-free thermometers would be added as an alternative to mercury-in-glass thermometers to facilitate the use of mercury-free products.

Z. Method 5E of Appendix A–3 of Part 60

In Method 5E, the use of the Rosemount Model 2100A total organic content analyzer would be replaced with the Tekmar-Dohrmann or equivalent analyzer, as neither the Rosemount analyzer nor any similar dual-injection analyzer is currently manufactured. Also, Section 12.5 inadvertently labels the equation for total particulate concentration as Eq. 5E–4, which would be corrected to Eq. 5E–5.

AA. Method 5H of Appendix A–3 of Part 60

In Method 5H, Section 12.1 would be revised to add missing terms C_i, C_o, Q_i, and Q_o; and procedures for the determination of an alternative tracer gas flow rate would be added.

BB. Method 6 of Appendix A–4 of Part 60

In Method 6, calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer would be added as an alternative to using a mercury-in-glass thermometer, and calibrating a barometer against a NIST-traceable barometer would be added as an alternative to calibrating against a mercury barometer. These revisions would facilitate the use of mercury-free products.

CC. Method 6C of Appendix A–4 of Part 60

In Section 4.0 of Method 6C, an incorrect reference to Section 4.1 of Method 6 would be corrected to reference Section 4.0 of Method 7E. Provisions that were removed from the original method that addressed potential quenching effects in fluorescence analyzers would be added again. It was previously believed that current fluorescence analyzers are not affected by quenching effects; however, we were informed that the provisions are still needed in many cases.

DD. Method 7 of Appendix A–4 of Part 60

In Method 7, procedures would be added to avoid biased results when sampling under conditions of high SO_2 concentrations; calibrating a barometer against a NIST-traceable barometer would be added as an alternative to calibrating against a mercury barometer; and calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer would be added as an alternative to using a mercury-in-glass thermometer. These revisions would facilitate the use of mercury-free products.

EE. Method 7A of Appendix A–4 of Part 60

In Method 7A, new procedures would be added to avoid biased results when sampling under conditions of high SO_2 concentrations, and calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer would be added as an alternative to using a mercury-in-glass thermometer to facilitate the use of mercury-free products.

FF. Method 7E of Appendix A–4 of Part 60

In Method 7E, the instructions for choosing the high-level calibration gas would be clarified. Instructions would be added to minimize contact of the sample with any condensate to reduce the chance of sample loss, and an error in the traverse point locations used to determine stratification across large stacks would be corrected. A statement noting that the stratification test is not required at sources with temporally varying emissions or low-concentration emissions would be added since a stratification test under such conditions would be meaningless or difficult to pass. The basis of a stable response for measurements in the system response time determination would be revised in Section 8.2.5 to conform with Section 8.2.6. The response time reading would be recorded after the concentration reading has reached 95 percent or within 0.5 ppm of a stable response for the gas instead of after reaching 95 percent of the certified gas concentration. This change removes a potential conflict between the response time stable reading criterion and the bias or system calibration error test criterion. Alternative sampling bags made of materials other than Tedlar would be allowed if the materials are applicable for retaining the compounds of interest. Tedlar bags are no longer being produced.

GG. Method 8 of Appendix A–4 of Part 60

In Method 8, corrections would be made to errors in the sample aliquot volumes required for containers 1 and 2 and in the values for V_a and V_{soln}. Figure 8–1 would be clarified to identify which impingers collect sulfuric acid/sulfur trioxide and which collect sulfur dioxide.

HH. Method 10 of Appendix A–4 of Part 60

Method 10 would be revised to allow the use of sample tanks as an alternative to flexible bags for sample collection. Tanks are an acceptable collection medium, are currently allowed for carbon monoxide in other EPA methods, and are appropriate for Method 10 as well.

II. Methods 10A and 10B of Appendix A–4 of Part 60

In Methods 10A and 10B, sampling bags made of materials other than Tedlar would be allowed if the materials have the sample retaining qualities of Tedlar. Tedlar bags are no longer produced.

JJ. Method 11 of Appendix A–5 of Part 60

Method 11 would be revised to address sample breakthrough at high concentrations. An additional collection impinger would be added to the train whenever the final impinger solution exhibits a yellow color. Calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer would be added as an alternative to using a mercury-in-glass thermometer to facilitate the use of mercury-free products.

KK. Method 12 of Appendix A–5 of Part 60

Method 12 would be revised to allow an analysis by inductively coupled plasma-atomic emission spectrometry (ICP–AES) or cold vapor atomic fluorescence spectrometry (CVAFS) as alternatives to atomic absorption (AA) analysis. The ICP–AES is currently an approved technique for lead analysis in Method 29, and CVAFS offers comparable sensitivity and precision to AA.

LL. Method 14A of Appendix A–5 of Part 60

In Section 10.1.1 of Method 14A, we inadvertently referenced Figure 5–6.

This reference would be corrected to Figure 5–5.

MM. Method 16A of Appendix A–6 of Part 60

In Method 16A, the applicability section would note that method results may be biased low if used at sources other than kraft pulp mills where stack oxygen levels may be lower.

NN. Method 18 of Appendix A–6 of Part 60

In Method 18, sampling bags made of materials other than Tedlar would be allowed if the materials are applicable for retaining the compounds of interest. Tedlar bags are no longer produced.

OO. Method 23 of Appendix A–7 of Part 60

In Method 23, the requirement in Section 2.2.7 that silica gel be stored in metal containers is unnecessary and would be deleted. Section 4.2.7 would be clarified to note that the used silica gel should be transferred to its original container or other suitable vessel if moisture is being determined. If moisture is not being determined, the spent silica gel may be discarded. Mercury-free thermometers would be added as an alternative to using mercury-in-glass thermometers to facilitate the use of mercury-free products.

PP. Method 24 of Appendix A–7 of Part 60

Method 24 would be revised to cite only ASTM Method D2369 and not the specific sections of the method, since the section numbers may change with periodic updates.

QQ. Method 25 of Appendix A–7 of Part 60

In Method 25, more detailed information would be added to describe the filters used for sample collection.

RR. Method 25C of Appendix A–7 of Part 60

Method 25C would be revised to allow sampling lines made of Teflon. Probes that have closed points and are driven below surface in a single step and withdrawn at a distance to create a gas gap would be allowed as acceptable substitutes to using pilot probes and the auger procedure. An equation for correcting the sample nitrogen concentration for tank dilution would be added as a supplemental calculation option.

SS. Method 25D of Appendix A–7 of Part 60

In Method 25D, errors in cross-references within the method would be corrected.

TT. Method 26 of Appendix A–8 of Part 60

Method 26 would be revised to allow the use of heated Teflon probes in place of glass-lined probes. Conflicting temperature requirements for the sampling system would be clarified. The note to keep the probe and filter temperature at least 20 °C above the source temperature would be removed because the specification is not needed at higher temperature stacks. The location of the thermocouple that monitors the collected gas temperature would be clarified as being in the gas stream, not the filter box. Method 26A would be an acceptable alternative to Method 26 since the methods are fundamentally similar and give comparable results when determining non-particulate hydrogen halides.

UU. Method 29 of Appendix A–8 of Part 60

Method 29 would be revised to allow samples to be analyzed by CVAFS as an alternative to AA analysis since CVAFS is as sensitive and precise as AA.

VV. Method 30B of Appendix A–8 of Part 60

In Method 30B, calibrating a barometer against a NIST-traceable barometer would be added as an alternative to calibrating against a mercury barometer to facilitate the use of mercury-free products.

Table 9–1 and the method text would be revised to amend the quality assurance/quality control criteria for sorbent trap section 2 breakthrough and sample analysis. These revisions would address compliance testing and relative accuracy testing of mercury monitoring systems currently being conducted at much lower emission concentrations.

For compliance/emissions testing, the specification in Table 9–1 for sample analysis would be revised to require analytical results be within the valid calibration range down to a concentration of 0.01 μg/dscm. This will ensure that measurements at the low levels being measured under recent rulemakings are of known, acceptable, and consistent quality. For relative accuracy testing of mercury monitoring systems, the sample analysis specification in Table 9–1 would remain the same, but the breakthrough criteria for second section in the sorbent traps would be revised to provide additional flexibility where mercury concentrations are less than 0.5 μg/dscm.

Finally, Method 30B would be revised to include the most up to date citation for determining the method detection limit or MDL.

WW. Performance Specification 1 of Appendix B of Part 60

In Performance Specification 1, the terms ‘‘full scale’’ and ‘‘span’’ would be noted as having the same meaning.

XX. Performance Specification 3 of Appendix B of Part 60

In Performance Specification 3, a statement that allows the relative accuracy to be within 20 percent of the reference method would be added to establish the original intent of the rule. This statement was inadvertently deleted in a previous amendment.

YY. Performance Specification 4 of Appendix B of Part 60

Performance Specification 4 would be revised to remove the required use of the interference trap specified in Method 10 when evaluating non-dispersive infrared continuous emission monitoring systems against Method 10. This is an old requirement, and the trap is not needed with modern analyzers.

ZZ. Performance Specification 4B of Appendix B of Part 60

Performance Specification 4B would be clarified to note that Equation 1 in Section 7.1.1 for calculating calibration error only applies to the carbon monoxide monitor and not the oxygen monitor. It would be noted for the oxygen monitor that the calibration error should be expressed as the oxygen concentration difference between the mean monitor and reference value at three levels.

AAA. Performance Specification 7 of Appendix B of Part 60

Performance Specification 7 would be revised to allow Methods 15 and 16 as reference methods in addition to Method 11. Methods 15 and 16 are approved for determining hydrogen sulfide and are appropriate for this application. Methods 15 and 16 are approved EPA reference methods for a number of sources. A pertinent reference would also be added to the references section.

BBB. Performance Specification 11 of Appendix B of Part 60

In Performance Specification 11, errors in the denominators of Equations 11–1 and 11–2 would be corrected.

CCC. Performance Specification 15 of Appendix B of Part 60

In Performance Specification 15, the general references to 40 CFR part 60, Appendix B for the relative accuracy analysis procedure would specifically cite Performance Specification 2 of 40 CFR part 60, Appendix B.

DDD. Performance Specification 16 of Appendix B of Part 60

Performance Specification 16 would be clarified to answer questions that have arisen since its publication. Retesting a predictive emission monitoring system (PEMS) after a sensor is replaced would be explained more clearly. Allowances would be made for relative accuracy testing at three load or production rate levels in cases where the key operating parameter could not be readily altered. Additional instruction would be added for performing the relative accuracy audit (RAA). An error in the RAA acceptance criterion would be corrected, and an alternative acceptance criterion for low concentration measurements would be added. The yearly relative accuracy test audit would clearly note that the statistical tests in Section 8.3 are not required. An incorrect reference to Equation 16–4 in Section 12.4 would be corrected.

EEE. Procedure 1 of Appendix F of Part 60

In Procedure 1, the relevant performance specification would be cited for the RAA calculation instead of using the current Equation 1–1 which is not appropriate for all pollutants.

FFF. Procedure 2 of Appendix F of Part 60

In Procedure 2, Equations 2–2 and 2–3 would be revised to have the full-scale value in the denominator, which is more appropriate than the up-scale check value. The denominator of equation 2–4 would be revised to include the volume of the reference device rather than the full-scale value. These revisions reflect the original intent of the rule.

GGG. Procedure 5 of Appendix F of Part 60

In Procedure 5, the second section listed as Section 6.2.6 would be correctly numbered as Section 6.2.7.

HHH. General Provisions (Subpart A) Part 61

In the General Provisions of part 61, Methods 3A and 19 would be added to the list of methods not requiring the use of audit samples in § 61.13(e). These methods were inadvertently omitted in the original rule.

III. Beryllium (Subpart C) Part 61

In the beryllium National Emission Standards for Hazardous Air Pollutants (NESHAP), Method 29 of part 60 would be added as an alternative to Method 104 in § 61.33(a) for emissions testing since Method 29 is used to determine beryllium under other rules and is appropriate for this subpart as well.

JJJ. Beryllium Rocket Motor Firing (Subpart D) Part 61

In the beryllium rocket motor firing NESHAP, a conversion error in the emission standard in § 61.42(a) would be corrected.

KKK. Mercury (Subpart E) Part 61

In the mercury NESHAP, Method 29 of part 60 would be added as an alternative to Method 101A in § 61.53(d)(2) for emissions testing since Method 29 is used to determine mercury under other rules and is appropriate for this subpart as well.

LLL. Inorganic Arsenic Emissions From Glass Manufacturing Plants (Subpart N) Part 61

In the glass manufacturing plants NESHAP, Method 29 in Appendix A of part 60 would be added as an alternative to Method 108 in § 61.164(d)(2)(i) for determining the arsenic emissions rate and in § 61.164(e)(1)(i) and (e)(2) for determining the arsenic concentration in a gas stream. Method 29 is used to determine arsenic under other rules and is appropriate for this subpart as well.

MMM. Method 101 of Appendix B of Part 61

Method 101 would be revised to allow analysis by ICP–AES or CVAFS as alternatives to AA analysis. These techniques are allowed for determining mercury in other approved methods and are appropriate for Method 101 as well. They were not available when Method 101 was promulgated.

NNN. Method 101A of Appendix B of Part 61

Method 101A would be revised to allow analysis by ICP–AES or CVAFS as alternatives to AA analysis. These techniques are allowed for determining mercury in other approved methods and are appropriate for Method 101A as well. They were not available when Method 101A was promulgated.

OOO. Method 102 of Appendix B of Part 61

In Method 102, mercury-free thermometers would be allowed in place of mercury-in-glass thermometers to facilitate the use of mercury-free products.

PPP. Method 104 of Appendix B of Part 61

Method 104 would be revised to allow analysis by ICP–AES as an alternative to AA analysis. This new technique is acceptable for measuring beryllium and was not available when Method 104 was promulgated. A new alternative procedures section would be added to address ICP–AES.

QQQ. Methods 108 and 108A of Appendix B of Part 61

Methods 108 and 108A would be revised to allow analysis by ICP–AES as an alternative to AA analysis. This new technique is acceptable for measuring arsenic and was not available when Methods 108 and 108A were promulgated. A new alternative procedures section would be added to address ICP–AES.

RRR. General Provisions (Subpart A) Part 63

In the General Provisions of part 63, Methods 3A and 19 would be added to the list of methods not requiring the use of audit samples in § 63.7(c). These were inadvertent omissions of the original rule. In § 63.8(f)(6)(iii), an incorrect reference to a section of Performance Specification 2 would be corrected.

SSS. Synthetic Organic Chemical Manufacturing Industry (Subpart G) Part 63

Subpart G would be revised to allow the use of Method 8260B in the SW–846 Compendium of Methods or Method 316 to determine hazardous air pollutant concentrations in wastewater streams in § 63.144(b)(5)(i). Both methods are appropriate for this application but were not considered during the original rule development.

TTT. Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Subpart N) Part 63

South Coast Air Quality Management District Method 205.1 would be added as a testing option for measuring total chromium. Method 205.1 is appropriate for this application, but its application to this rule was not considered during the original rule development.

UUU. Ethylene Oxide Emissions Standards for Sterilization Facilities (Subpart O) Part 63

The ethylene oxide emissions standards for sterilization facilities NESHAP would be revised to allow

California Air Resources Board (CARB) Method 431 as an alternative to the procedures in § 63.365(b) for determining efficiency at the sterilization chamber vent. Method 431 is appropriate for this application but was not considered during the original rule development. An error in a reference to a section in Performance Specification 8 would also be corrected.

VVV. Marine Tank Vessel Loading Operations (Subpart Y) Part 63

The marine tank vessel loading operations NESHAP would be revised to allow Method 25B as an alternative to Method 25A in § 63.565(d)(5) for determining the average volatile organic compound (VOC) concentration upstream and downstream of recovery devices. Method 25B would be allowed as an alternative to Methods 25 and 25A for determining the percent reduction in VOC in § 63.565(d)(8), and the requirement that Method 25B be validated according to Method 301 in § 63.565(d)(10) would be added. Method 25B would also be added as an alternative to Method 25A in determining the baseline outlet VOC concentration in § 63.565(g). Method 25B uses a different detector than Method 25A but gives comparable results to Method 25A in these applications.

WWW. Aerospace Manufacturing and Rework Facilities (Subpart GG) Part 63

The aerospace manufacturing and rework facilities NESHAP would be revised to remove an incorrect reference to the location of Method 319 in § 63.750(o).

XXX. Pharmaceuticals Production (Subpart GGG) Part 63

The pharmaceuticals production NESHAP would be revised to allow Method 320 as an alternative to Method 18 for demonstrating that a vent is not a process vent. Method 320 is a broadly applicable method that is acceptable in this application because it is self-validating.

YYY. Secondary Aluminum Production (Subpart RRR) Part 63

The secondary aluminum production NESHAP would be revised to allow Method 26 as an alternative to Method 26A in § 63.1511(c)(9) for determining hydrochloric acid (HCl) concentration. Method 26 is the non-isokinetic version of Method 26A and is being allowed in all cases where non-isokinetic sampling for HCl is performed.

ZZZ. Manufacturing of Nutritional Yeast (Subpart CCCC) Part 63

Table 2 in the manufacturing of nutritional yeast NESHAP would be revised to delete the requirements to use Methods 1, 2, 3, and 4 when measuring VOC by Method 25A. Methods 1, 2, 3, and 4 are required for particulate matter sampling and the VOC in this application is normally not particulate in nature.

AAAA. Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (Subpart UUUU) Part 63

Table 4 in the petroleum refineries: catalytic cracking units, catalytic reforming units, and sulfur recovery units NESHAP would be revised to allow Method 320 as an alternative to Method 18 for determining control device efficiency for organic compounds. Method 320 is a broadly applicable method that is acceptable in this application because it is self-validating.

BBBB. Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ) Part 63

Table 4 in the stationary reciprocating internal combustion engines NESHAP would be revised to clarify that a heated probe is not necessary when using ASTM D6522 to measure oxygen or carbon dioxide concentrations because condensed moisture is normally not an interferent to these compounds. The requirement to use Method 1 or 1A for sampling site and sampling point location would be deleted because the exhausts are small and have temporally varying emissions. Instruction would be added to sample at the centroid of the stack.

CCCC. Method 306 of Appendix A of Part 63

Method 306 would be revised to remove references to two figures that do not exist and to add clarifying information about the conditions under which ICP is appropriate for sample analysis. Alternative mercury-free thermometers also would be added as alternatives to mercury-in-glass thermometers to facilitate the use of mercury-free products.

DDDD. Method 306A of Appendix A of Part 63

In Method 306A, information would be added to clarify the conditions under which sample filtering is required.

EEEE. Methods 308, 315, and 316 of Appendix A of Part 63

In Methods 308, 315, and 316, calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer would be added as an alternative to mercury-in-glass thermometers to facilitate the use of non-mercury products. Alternative mercury-free thermometers would be added as an alternative to using a mercury-in-glass thermometers.

FFFF. Method 321 of Appendix A of Part 63

In Method 321, the term for dilution factor in the calculations would be clarified.

IV. Request for Comments

The agency is reviewing the adequacy of its current test methods in regard to sampling site selection and sampling point requirements. Emission gas flow patterns affect representative testing, and this is not addressed in many EPA test methods. Method 1 contains provisions for sampling point locations, traversing, and determination of cyclonic flow, and Method 7E was revised to contain procedures for determining gaseous stratification in 2006. However, there are no requirements in most methods to follow the Method 1 or 7E procedures.

Method 7E allows stratification to be assessed through either a 3- or 12-point traverse while measuring variations in either a pollutant or diluent concentration. The degree of stratification determines whether a single-point, 3-, or 12-point traverse is used for the test. There are no requirements to check for cyclonic flow in Method 7E.

We have information that suggests deficiencies exist in the 3-point test in a number of cases and that at least a 5-point, dual axis test should be required. A summary of this information has been included in the regulatory docket. We are also reconsidering the appropriateness of a diluent gas for the test instead of the regulated pollutant.

In this proposed rule, we would update the General Provisions of Parts 60, 61, and 63 to include evaluations of gas stratification and cyclonic flow with all compliance tests. The agency solicits your comments and data to aid in establishing better procedures.

V. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a ''significant regulatory action'' under the terms of Executive Order (EO) 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

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). The amendments being proposed in this action to the test methods and testing regulations do not add information collection requirements but make needed corrections and updates to 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 as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (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 rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This proposed rule will neither impose emission measurement requirements beyond those specified in the current regulations, nor will it change any emission standard. This proposed action will not impose any new requirements on small entities. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

This action contains no Federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538 for State, local, or tribal governments or the private sector. The action imposes no enforceable duty on any State, local or tribal governments or the private sector. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA. This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This action corrects and updates current testing regulations and does not add any new requirements.

E. Executive Order 13132: Federalism

This action 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. This action simply corrects minor errors and makes updates to current source testing methods to maintain their original intent. Thus, Executive Order 13132 does not apply to this action. In the spirit of Executive Order 13132, and consistent with the EPA policy to promote communications between the EPA and State and local governments, the EPA specifically solicits comment on this proposed rule from State and local officials.

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

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This proposed rule imposes no requirements on tribal governments. This action simply corrects and updates current testing regulations. Thus, Executive Order 13175 does not apply to this action. The EPA specifically solicits additional comment on this proposed action from tribal officials.

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

The EPA interprets EO 13045 (62 FR 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 Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211 (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 104–113 (15 U.S.C. 272 note) directs the 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 the EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking involves technical standards. The EPA proposes to use ASTM D975–076, developed and adopted by the American Society for Testing and Materials (ASTM). This standard may be obtained from ASTM at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959. ASTM D975–076 has been determined to be at least as stringent as currently required ASTM D396 for defining ''distillate oil.'' ASTM D975–076 is required in some State permits for this purpose and end users have asked that it be allowed as an alternative to D396 under 40 CFR 60.41c.

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

Executive Order (EO) 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.

The EPA has determined that this proposed 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 rule corrects and updates current testing regulations and does not cause emission increases from regulated sources.

Revisions to Test Methods and Testing Regulations

List of Subjects in 40 CFR Parts 51, 60, 61, and 63

Environmental protection, Air pollution control, Test methods and procedures, and Performance specifications.

Dated: November 29, 2011.

Lisa P. Jackson,

Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency proposes to amend title 40, chapter I of the Code of Federal Regulations as follows:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

1. The authority citation for part 51 continues to read as follows:

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

2. Amend Appendix M by revising section 4a. to read as follows:

Appendix M to Part 51—Recommended Test Methods for State Implementation Plans

* * * * *

4. * * *

a. The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of Appendix A–3 of Part 60, Methods 6C, 7E, 9, and 10 of Appendix A–4 of Part 60, Methods 18 and 19 of Appendix A–6 of Part 60, Methods 20, 22, and 25A of Appendix A–7 of Part 60, and Methods 303, 318, 320, and 321 of Appendix A of Part 63. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. ''Commercially available'' means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, *http://www.epa.gov/ttn/emc,* to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request and the compliance authority may grant a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

* * * * *

3. Amend Method 201A of Appendix M as follows:

a. By revising sections 8.3.4(b) and 8.3.4.1.

b. By revising sections 8.7.2.2 and 8.7.5.5(a).

c. By revising the introductory text of section 10.1.

d. By revising section 11.2.1.

e. By revising Equation 9 in section 12.5.

f. By removing section 10.5.

g. By removing the term ''V_b'' and its definition from section 12.1.

Method 201A—Determination of PM_{10} and $PM_{2.5}$ Emissions From Stationary Sources (Constant Sampling Rate Procedure)

* * * * *

8.3.4 * * *

(b) The appropriate nozzle to maintain the required gas sampling rate for the velocity pressure range and isokinetic range. If the isokinetic range cannot be met (*e.g.,* batch processes, extreme process flow or temperature variation), void the sample or use methods subject to the approval of the Administrator to correct the data. The acceptable variation from isokinetic sampling is 80 to 120 percent and no more than 100 ± 21 percent (2 out of 12 or 5 out of 24) sampling points outside of this criteria.

* * * * *

8.3.4.1 Preliminary traverse. You must use an S-type pitot tube with a conventional thermocouple to conduct the traverse. Conduct the preliminary traverse as close as possible to the anticipated testing time on sources that are subject to hour-by-hour gas flow rate variations of approximately ±20 percent and/or gas temperature variations of approximately ±10 °C (±18; °F). (**Note:** You should be aware that these variations can cause errors in the cyclone cut diameters and the isokinetic sampling velocities.)

* * * * *

8.7.2.2 Probe blockage factor. You must use Equation 26 to calculate an average probe blockage correction factor (b_f) if the diameter of your stack or duct is between 25.7 and 36.4 inches for the combined $PM_{2.5}/PM_{10}$ sampling head and pitot and between 18.8 and 26.5 inches for the $PM_{2.5}$ cyclone and pitot. A probe blockage factor is calculated because of the flow blockage caused by the relatively large cross-sectional area of the cyclone sampling head, as discussed in Section 8.3.2.2 and illustrated in Figures 8 and 9 of Section 17. You must determine the cross-sectional area of the cyclone head you use and determine its stack blockage factor. (**Note:** Commercially-available sampling heads (including the PM_{10} cyclone, $PM_{2.5}$ cyclone, pitot and filter holder) have a projected area of approximately 31.2 square inches when oriented into the gas stream. As the probe is moved from the outermost to the innermost point, the amount of blockage that actually occurs ranges from approximately 13 square inches to the full 31.2 inches plus the blockage caused by the probe extension. The average cross-sectional area blocked is 22 square inches.

* * * * *

8.7.5.5 * * *

(a) Container #1, Less than or equal to $PM_{2.5}$ micrometer filterable particulate. Use tweezers and/or clean disposable surgical gloves to remove the filter from the filter holder. Place the filter in the Petri dish that you labeled with the test identification and Container #1. Using a dry brush and/or a sharp-edged blade, carefully transfer any PM and/or filter fibers that adhere to the filter holder gasket or filter support screen to the Petri dish. Seal the container. This container holds particles less than or equal to 2.5 micrometers that are caught on the in-stack filter. (**Note:** If the test is conducted for PM_{10} only, then Container #1 would be for less than or equal to PM_{10} micrometer filterable particulate.)

* * * * *

10.1 Gas Flow Velocities. You must use an S-type pitot tube that meets the required EPA specifications (EPA Publication 600/4–77–0217b) during these velocity measurements. (**NOTE:** If, as specified in Section 8.7.2.3, testing is performed in stacks less than 26.5 inches in diameter, testers may use a standard pitot tube according to the requirements in Method 1 or 2 of Appendix A–3 to Part 60.) You must also complete the following:

* * * * *

11.2.1 Container #1, Less than or Equal to $PM_{2.5}$ Micrometer Filterable Particulate. Transfer the filter and any loose particulate from the sample container to a tared weighing dish or pan that is inert to solvent or mineral acids. Desiccate for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh to a constant weight and report the results to the nearest 0.1 mg. (See Section 3.0 for a definition of constant weight.) If constant weight requirements cannot be met, data should be reported and flagged as a minimum value. (*Note:* Regardless of the stack temperature, you are not required to speciate the Method 201A nozzle, front half or in-stack filter sample into organic and inorganic fractions. Neither Method 17 nor 201A require separate analysis of the filter for inorganic and organic PM. Since the in-stack filter samples collected at ≤30 °C (85 °F) may include both filterable insoluble particulate and condensable particulate, the filter should be weighed after desiccation but not extracted since insoluble particulate will not be recovered from the extraction.)

* * * * *

12.5 * * *

For N_{re} greater than or equal to 3,162:

$$Q_{IV} = 0.07657 \left[\frac{\mu}{C^{0.6205}}\right]\left[\frac{P_S M_W}{T_s}\right]^{-0.3795}\left[\frac{1}{D_{50}}\right]^{1.241} \qquad \text{(Eq. 9)}$$

* * * * *

4. Amend Method 202 of Appendix M as follows:

a. By revising the introductory text in section 8.5.3.1.

b. By revising section 11.2.2.

c. By revising Figures 2, 3, 4, 5, and 6 in section 18.0.

Method 202—Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources

* * * * *

8.5.3.1 If you choose to conduct a pressurized nitrogen purge on the complete CPM sampling train, you may quantitatively transfer the water collected in the condenser and the water dropout impinger to the backup impinger as an alternative to replacing the short stem impinger insert with a long stem insert prior to purging the sampling train. You must measure the water combined in the backup impinger and record the volume or weight as part of the moisture collected during sampling as specified in Section 8.5.3.4.

* * * * *

11.2.2 CPM Container #1, Aqueous Liquid Impinger Contents. Analyze the water soluble CPM in Container #1 as described in this section. Place the contents of Container #1 into a separatory funnel. Add approximately 30 ml of hexane to the funnel, mix well, and pour off the upper organic phase. Repeat this procedure twice with 30 ml of hexane each time combining the organic phase from each extraction. Each time, leave a small amount of the organic/hexane phase in the separatory funnel, ensuring that no water is collected in the organic phase. This extraction should yield about 90 ml of organic extract. Combine the organic extract from Container #1 with the organic train rinse in Container #2.

* * * * *

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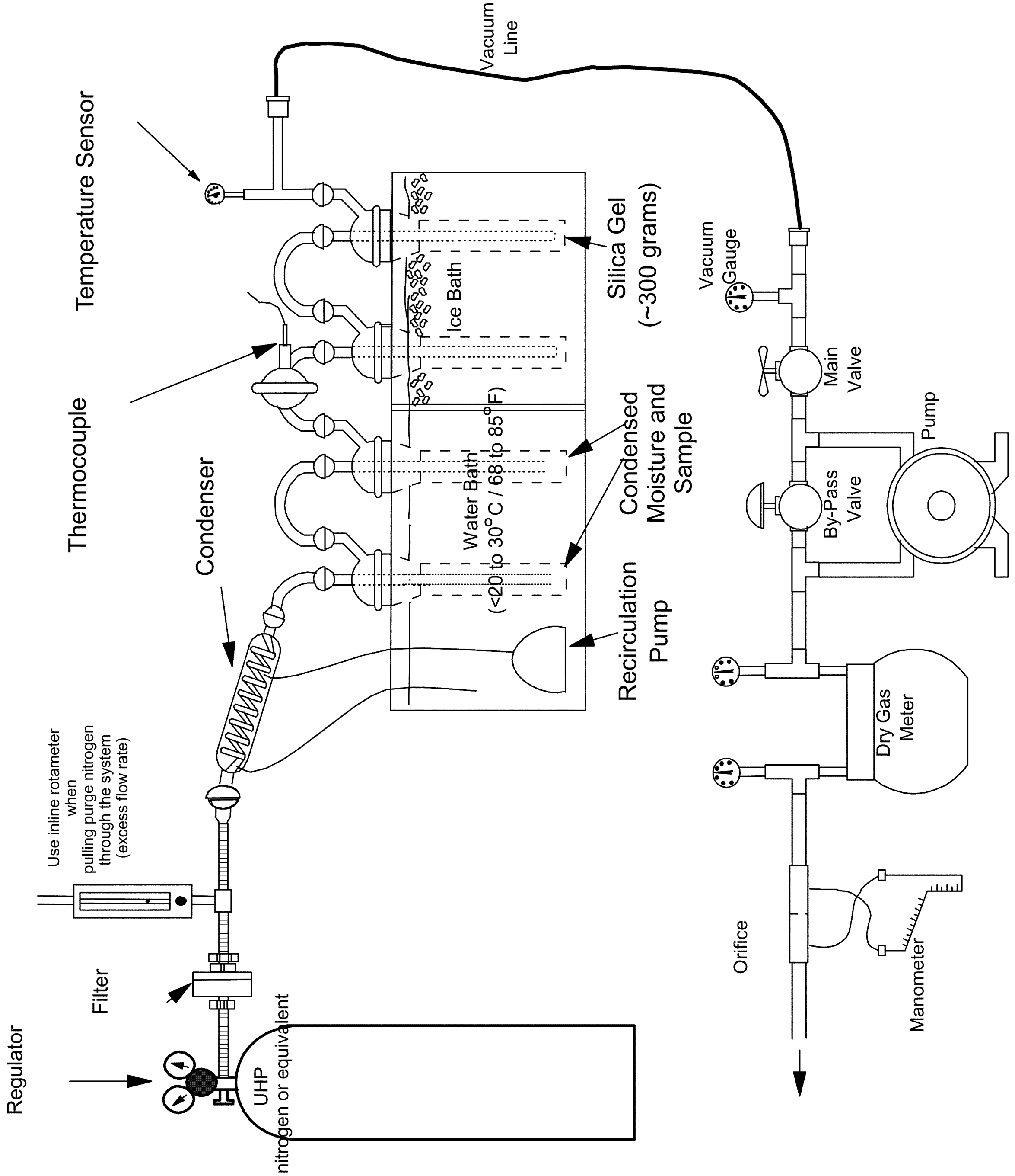


Figure 2. Nitrogen Purge Train Configuration (Vacuum Purge)

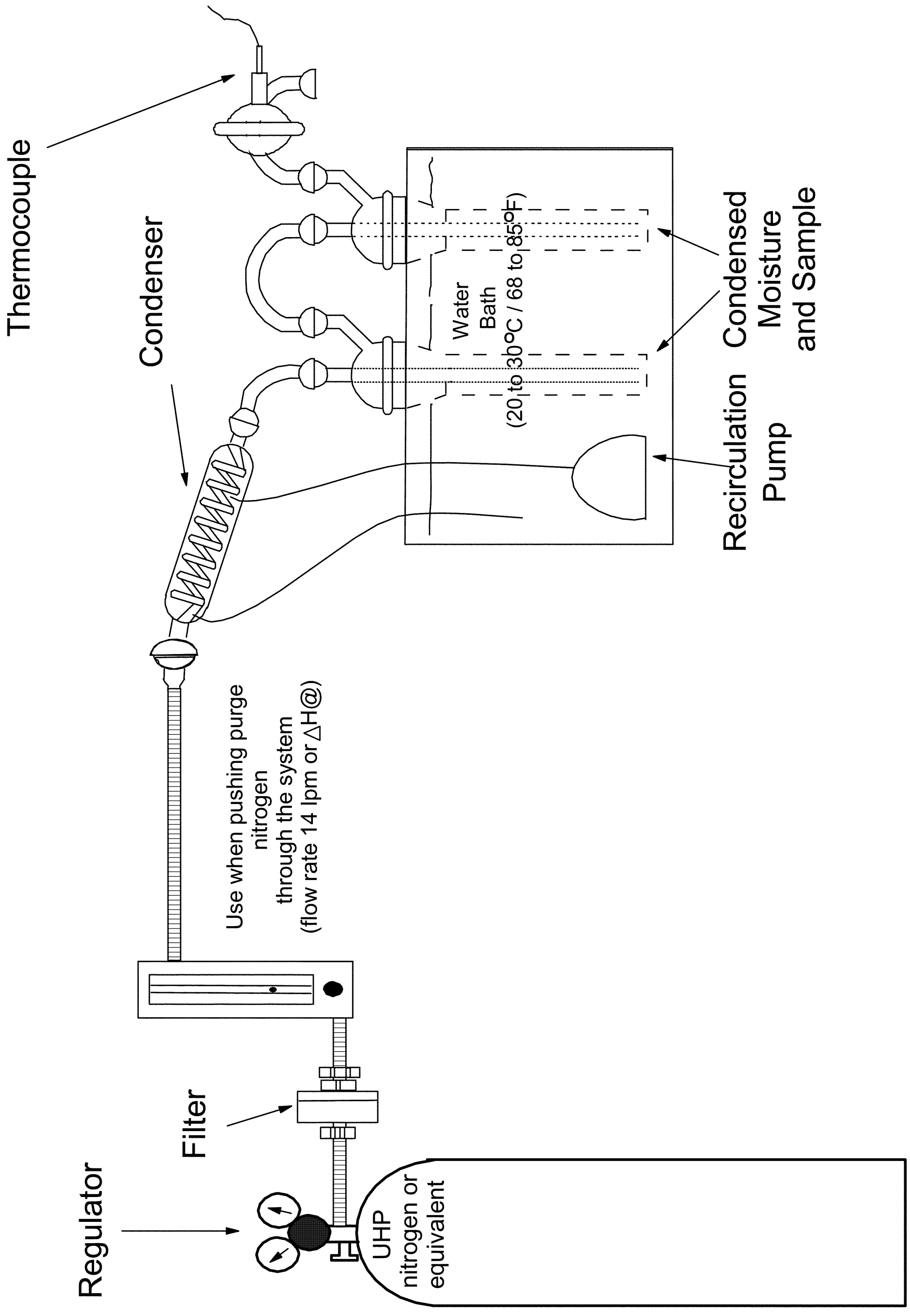


Figure 3. Nitrogen Purge Train Configuration (Pressure Purge)

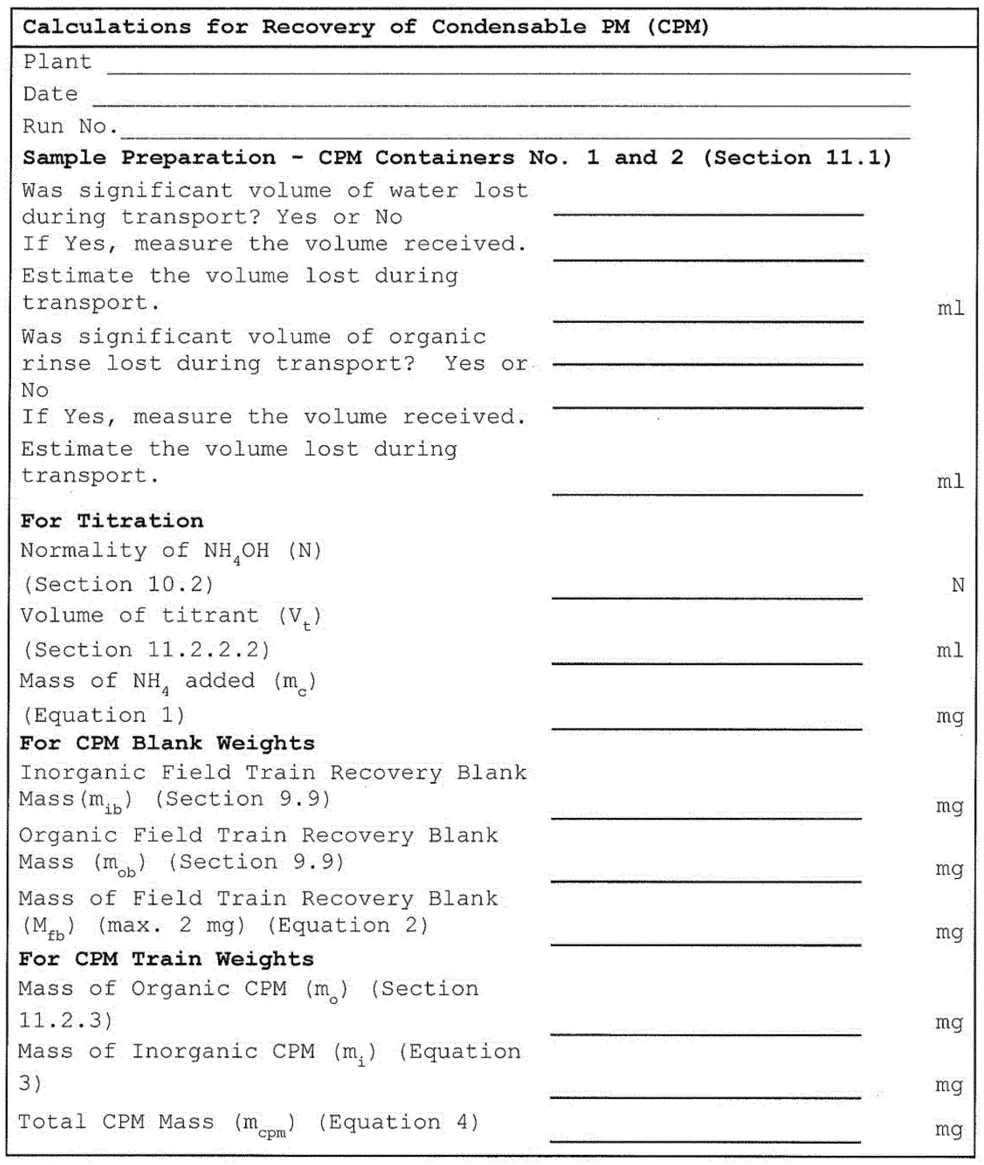
Field Train Recovery Blank Condensable Particulate Calculations	
Plant	
Date	
Blank No.	
CPM Filter No.	
Water volume added to purge train (V_p)	ml
Field Reagent Blank Mass[a]	
Water (Section 11.2.7)	mg
Acetone (Section 11.2.6)	mg
Hexane (Section 11.2.8)	mg
Field Train Recovery Blank Mass	
Mass of Organic CPM (m_{ob}) (Section 11.2.3)	mg
Mass of Inorganic CPM (m_{ib}) (Equation 3)	mg
Mass of the Field Train Recovery Blank (not to exceed 2.0 mg) (Equation 2)	mg

[a] Field reagent blanks are optional and intended to provide the testing contractor with information they can use to implement corrective actions, if necessary, to reduce the residual mass contribution from reagents used in the field. Field reagent blanks are not used to correct the CPM measurement results.

Figure 4. Field Train Recovery Blank Condensable Particulate Calculations

Other Field Train Sample Condensable Particulate Data	
Plant	
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train (max 50 ml) (V_p)	ml
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train (max 50 ml) (V_p)	ml
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train (max 50 ml) (V_p)	ml

Figure 5. Other Field Train Sample Condensable Particulate Data



Calculations for Recovery of Condensable PM (CPM)

Plant ______

Date ______

Run No. ______

Sample Preparation - CPM Containers No. 1 and 2 (Section 11.1)

Was significant volume of water lost during transport? Yes or No ______

If Yes, measure the volume received. ______

Estimate the volume lost during transport. ______ ml

Was significant volume of organic rinse lost during transport? Yes or No ______

If Yes, measure the volume received. ______

Estimate the volume lost during transport. ______ ml

For Titration

Normality of NH_4OH (N) (Section 10.2) ______ N

Volume of titrant (V_t) (Section 11.2.2.2) ______ ml

Mass of NH_4 added (m_c) (Equation 1) ______ mg

For CPM Blank Weights

Inorganic Field Train Recovery Blank Mass(m_{ib}) (Section 9.9) ______ mg

Organic Field Train Recovery Blank Mass (m_{ob}) (Section 9.9) ______ mg

Mass of Field Train Recovery Blank (M_{fb}) (max. 2 mg) (Equation 2) ______ mg

For CPM Train Weights

Mass of Organic CPM (m_o) (Section 11.2.3) ______ mg

Mass of Inorganic CPM (m_i) (Equation 3) ______ mg

Total CPM Mass (m_{cpm}) (Equation 4) ______ mg

Figure 6. CPM Work Table

* * * * *

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PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

5. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

6. Amend § 60.8 by revising paragraph (g)(1) and adding new paragraphs (h) and (i) to read as follows:

§ 60.8 Performance tests.

* * * * *

(g) * * *

(1) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of Appendix A–3 of Part 60, Methods 6C, 7E, 9, and 10 of Appendix A–4 of Part 60, Methods 18 and 19 of Appendix A–6 of Part 60, Methods 20, 22, and 25A of Appendix A–7 of Part 60, and Methods 303, 318, 320, and 321 of Appendix A of Part 63. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. ‘‘Commercially available’’ means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, *www.epa.gov/ttn/emc,* to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner,

operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

* * * * *

(h) Unless otherwise specified in the applicable subpart, each test location must be verified to be free of cyclonic flow and evaluated for the existence of emission gas stratification and the required number of sampling traverse points. If other procedures are not specified in the applicable subpart to the regulations, use the appropriate procedures in Method 1 to check for cyclonic flow and Method 7E to evaluate emission gas stratification and selection of sampling points.

(i) Whenever the use of multiple calibration gases is required by a test method, performance specification, or quality assurance procedure in a Part 60 standard or appendix, Method 205 of 40 CFR part 51, Appendix M, ‘‘Verification of Gas Dilution Systems for Field Instrument Calibrations,’’ may be used.

7. Amend § 60.13 by revising paragraph (d)(1) to read as follows:

§ 60.13 Monitoring requirements.

* * * * *

(d)(1) Owners and operators of a CEMS installed in accordance with the provisions of this part, must check the zero (or low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with a written procedure. The zero and span must, at a minimum, be adjusted whenever either the 24-hour zero drift or the 24-hour span drift exceeds two times the limit of the applicable performance specification in Appendix B of this part. The system must allow the amount of the excess zero and span drift to be recorded and quantified whenever specified. Owners and operators of a COMS installed in accordance with the provisions of this part must check the zero and upscale (span) calibration drifts at least once daily. For a particular COMS, the acceptable range of zero and upscale calibration materials is defined in the applicable version of PS–1 in Appendix B of this part. For a COMS, the optical surfaces, exposed to the effluent gases, must be cleaned before performing the zero and upscale drift adjustments, except for systems using automatic zero adjustments. The optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

* * * * *

8. Amend § 60.17 by revising paragraphs (e) and (e)(1) to read as follows:

§ 60.17 Incorporations by reference.

* * * * *

(e) The following material is available for purchase from the Water Environment Federation, 2626 Pennsylvania Avenue NW., Washington, DC 20037.

(1) Method 209A, Total Residue Dried at 103–105 °C, in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1999, IBR approved February 25, 1985, for § 60.683(b).

* * * * *

9. Amend § 60.46b by revising paragraphs (f)(1)(ii) and (h)(1) and (2) to read as follows:

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

* * * * *

(f) * * *

(1) * * *

(ii) Method 7E of Appendix A of this part or Method 320 of Appendix A of Part 63 shall be used to determine the NO_X concentrations. Method 3A or 3B of Appendix A of this part shall be used to determine O_2 concentration.

* * * * *

(h) * * *

(1) Conduct an initial performance test as required under § 60.8 over a minimum of 24 consecutive steam generating unit operating hours at maximum heat input capacity to demonstrate compliance with the NO_X emission standards under § 60.44b using Method 7, 7A, or 7E of Appendix A of this part, Method 320 of Appendix A of Part 63, or other approved reference methods; and

(2) Conduct subsequent performance tests once per calendar year or every 400 hours of operation (whichever comes first) to demonstrate compliance with the NO_X emission standards under § 60.44b over a minimum of 3 consecutive steam generating unit operating hours at maximum heat input capacity using Method 7, 7A, or 7E of Appendix A of this part, Method 320 of Appendix A of Part 63, or other approved reference methods.

* * * * *

10. Amend § 60.47b by revising paragraph (b)(2) to read as follows:

§ 60.47b Emission monitoring for sulfur dioxide.

* * * * *

(b) * * *

(2) Measuring SO_2 according to Method 6B of Appendix A of this part at the inlet or outlet to the SO_2 control system. An initial stratification test is required to verify the adequacy of the sampling location for Method 6B of Appendix A of this part. The stratification test shall consist of three paired runs of a suitable SO_2 and CO_2 measurement train operated at the candidate location and a second similar train operated according to the procedures in Section 3.2 and the applicable procedures in Section 7 of Performance Specification 2. Method 6B of Appendix A of this part, Method 6A of Appendix A of this part, or a combination of Methods 6 and 3 or 3B of Appendix A of this part or Methods 6C or Method 320 of Appendix A of Part 63 and 3A of Appendix A of this part are suitable measurement techniques. If Method 6B of Appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of Appendix A of this part, 24-hour tests, the mean of the absolute

difference between the three paired runs must be less than 10 percent.

* * * * *

11. Amend § 60.51c by revising the definition of ''Medical/infectious waste'' to read as follows:

§ 60.51c Definitions.

* * * * *

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that are listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in § 261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in § 261.4(a)(1) of this chapter.

* * * * *

12. Amend § 60.84 by revising the equation in paragraph (d) to read as follows:

§ 60.84 Emission monitoring.

* * * * *

(d) * * *

$$E_s = (C_s\ S)/[0.265 - (0.0126\ \%O_2) - (A\ \%CO_2)]$$

* * * * *

13. Amend § 60.154 by revising paragraph (b)(5) to read as follows:

§ 60.154 Test methods and procedures.

* * * * *

(b) * * *

(5) Samples of the sludge charged to the incinerator shall be collected in nonporous jars at the beginning of each run and at approximately 1-hour intervals thereafter until the test ends; and ''2540 G. Total, Fixed, and Volatile Solids in Solid and Semisolid Samples, in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998'' (incorporated by reference—see § 60.17) shall be used to determine dry sludge content of each sample (total solids residue), except that:

* * * * *

14. Amend § 60.284 by revising the equation in paragraph (c)(3) to read as follows:

§ 60.284 Monitoring of emissions and operations.

* * * * *

(c) * * *

(3) * * *

$$C_{corr} = C_{meas} \times (21 - X)/(21 - Y)$$

* * * * *

15. Amend § 60.335 by revising two terms for the equation in paragraph (b)(1)to read as follows:

§ 60.335 Test methods and procedures.

* * * * *

(b) * * *

(1) * * *

P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure. Alternatively, you may use 760 mm Hg (29.92 in Hg),

P_o = observed combustor inlet absolute pressure at test, mm Hg. Alternatively, you may use the barometric pressure for the date of the test,

* * * * *

16. Amend 60.374 by revising paragraphs (b)(1), (b)(2), and (c)(2) to read as follows:

§ 60.374 Test methods and procedures.

* * * * *

(b) * * *

(1) Method 12 or Method 29 shall be used to determine the lead concentration (C_{Pb}) and, if applicable, the volumetric flow rate (Q_{sda}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

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

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

Where:

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

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

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

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

* * * * *

(c) * * *

(2) Method 12 or Method 29 shall be used to determine the lead concentration (C_{Pb}) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

* * * * *

17. Amend § 60.382 by revising paragraph (a)(1) to read as follows:

§ 60.382 Standard for particulate matter.

* * * * *

(a) * * *

(1) Contain particulate matter in excess of 0.05 grams per dry standard cubic meter (0.05 g/dscm).

* * * * *

18. Amend § 60.386 by revising paragraph (b)(2) to read as follows:

§ 60.386 Test methods and procedures.

* * * * *

(b) * * *

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions and process fugitive emissions. The observer shall read opacity only when emissions are clearly identified as emanating solely from the affected facility being observed. A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval. This option is subject to the following limitations:

(i) No more than three emission points are read concurrently;

(ii) All three emission points must be within a 70° viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points; and

(iii) If an opacity reading for any one of the three emission points is within 5 percent opacity of the application standard, then the observer must stop taking readings for the other two points and continue reading just that single point.

* * * * *

19. Amend § 60.472 by revising paragraph (a)(1)(ii) to read as follows:

§ 60.472 Standards for particulate matter.

* * * * *

(a) * * *

(1) * * *

(ii) 0.4 kg/Mg (0.8 lb/ton) of saturated felt or smooth-surfaced roll roofing produced;

* * * * *

20. Amend § 60.660 by revising paragraph (c)(4) to read as follows:

§ 60.660 Applicability and designation of affected facility.

* * * * *

(c) * * *

(4) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§ 60.662; 60.664 (e), (f), and (g); and 60.665 (h) and (l).

* * * * *

21. Amend § 60.665 by revising paragraphs (h)(2) and (3) to read as follows:

§ 60.665 Reporting and recordkeeping requirements.

* * * * *

(h) * * *

(2) Any recalculation of the TRE index value performed pursuant to § 60.664(g); and

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.664(e).

* * * * *

22. Amend Subpart IIII by revising Table 7 to read as follows:

TABLE 7 TO SUBPART IIII OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS FOR STATIONARY CI ICE WITH A DISPLACEMENT OF ≥30 LITERS PER CYLINDER

[As stated in § 60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder]

Each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥30 liters per cylinder.	a. Reduce NO_X emissions by 90 percent or more.	i. Measure NO_X at the centroid of the exhaust at the inlet and outlet of the control device;	(1) Method 7E of 40 CFR part 60, Appendix A, Method 320 of 40 CFR part 63, Appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(a) NO_X concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		ii. Measure O_2 at the inlet and outlet of the control device; and,	(2) Method 3, 3A, or 3B of 40 CFR part 60, Appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device.	(3) Method 4 of 40 CFR part 60, Appendix A, Method 320 of 40 CFR part 63, Appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO_X concentration.
	b. Limit the concentration of NO_X in the stationary CI internal combustion engine exhaust.	i. Measure NO_X at the centroid of the exhaust of the stationary internal combustion engine;	(1) Method 7E of 40 CFR part 60, Appendix A, Method 320 of 40 CFR part 63, Appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(a) If using a control device, the sampling site must be located at the outlet of the control device. NO_X concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location; and,	(2) Method 3, 3A, or 3B of 40 CFR part 60, Appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurement for NO_X concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location.	(3) Method 4 of 40 CFR part 60, Appendix A, Method 320 of 40 CFR part 63, Appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO_X concentration.
	c. Reduce PM emissions by 60 percent or more.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, Appendix A.	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, Appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, Appendix A.	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.

TABLE 7 TO SUBPART IIII OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS FOR STATIONARY CI ICE WITH A DISPLACEMENT OF ≥30 LITERS PER CYLINDER—Continued

[As stated in § 60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder]

Each	Complying with the requirement to	You must	Using	According to the following requirements
		iv. Measure PM at the inlet and outlet of the control device.	(4) Method 5 of 40 CFR part 60, Appendix A.	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, Appendix A.	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 3, 3A, or 3B of 40 CFR part 60, Appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location;	(3) Method 4 of 40 CFR part 60, Appendix A.	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine.	(4) Method 5 of 40 CFR part 60, Appendix A.	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

23. Amend Subpart JJJJ by revising Table 2 to read as follows:

TABLE 2 TO SUBPART JJJJ OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS

[As stated in § 60.4244, you must comply with the following requirements for performance tests within 10 percent of 100 percent peak (or the highest achievable) load]

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary SI internal combustion engine demonstrating compliance according to § 60.4244.	a. limit the concentration of NO_X in the stationary SI internal combustion engine exhaust.	i. Measure NO_X at the centroid of the exhaust of the stationary internal combustion engine;	(1) Method 7E of 40 CFR part 60, Appendix A, Method D6522–00(2005),[a] Method 320 of 40 CFR part 63, Appendix A, or ASTM D6348–03 (incorporated by reference, see § 60.17).	(a) If using a control device, the sampling site must be located at the outlet of the control device. Results of this test consist of the average of the three 1-hour or longer runs.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust;	(2) Method 3, 3A, or 3B[b] of 40 CFR part 60, Appendix A or ASTM Method D6522–00(2005).[a]	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. Determine the exhaust flow rate of the stationary internal combustion engine exhaust; and	(3) Method 2 or 19 of 40 CFR part 60.	

TABLE 2 TO SUBPART JJJJ OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS—Continued

[As stated in § 60.4244, you must comply with the following requirements for performance tests within 10 percent of 100 percent peak (or the highest achievable) load]

For each	Complying with the requirement to	You must	Using	According to the following requirements
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location.	(4) Method 4 of 40 CFR part 60, Appendix A, Method 320 of 40 CFR part 63, Appendix A, or ASTM D6348–03 (incorporated by reference, see § 60.17).	(c) Measurements to determine moisture must be made at the same time as the measurement for NO_X concentration.
	b. limit the concentration of CO in the stationary SI internal combustion engine exhaust.	i. Sample for CO at the centroid of the stack of the stationary internal combustion engine;	(1) Method 10 of 40 CFR part 60, Appendix A, ASTM Method D6522–00(2005),[a] Method 320 of 40 CFR part 63, Appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(a) If using a control device, the sampling site must be located at the outlet of the control device. Results of this test consist of the average of the three 1-hour or longer runs.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B[b] of 40 CFR part 60, Appendix A or ASTM Method D6522–00(2005).[a]	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for CO concentration.
		iii. Determine the exhaust flow rate of the stationary internal combustion engine exhaust; and	(3) Method 2 or 19 of 40 CFR part 60.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location.	(4) Method 4 of 40 CFR part 60, Appendix A, Method 320 of 40 CFR part 63, Appendix A, or ASTM D6348–03 (incorporated by reference, see § 60.17).	(c) Measurements to determine moisture must be made at the same time as the measurement for CO concentration.
	c. limit the concentration of VOC in the stationary SI internal combustion engine exhaust.	i. Measure VOC at the centroid of the exhaust of the stationary internal combustion engine;	(1) Methods 25A and 18 of 40 CFR part 60, Appendix A, Method 25A with the use of a methane cutter as described in 40 CFR 1065.265, Method 18 or 40 CFR part 60, Appendix A,[c d] Method 320 of 40 CFR part 63, Appendix A, or ASTM D6348–03 (incorporated by reference, see § 60.17).	(a) If using a control device, the sampling site must be located at the outlet of the control device. Results of this test consist of the average of the three 1-hour or longer runs.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B[b] of 40 CFR part 60, Appendix A or ASTM Method D6522–00(2005).[a]	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for VOC concentration.
		iii. Determine the exhaust flow rate of the stationary internal combustion engine exhaust; and	(3) Method 2 or 19 of 40 CFR part 60.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location.	(4) Method 4 of 40 CFR part 60, Appendix A, Method 320 of 40 CFR part 63, Appendix A, or ASTM D6348–03 (incorporated by reference, see § 60.17).	(c) Measurements to determine moisture must be made at the same time as the measurement for VOC concentration.

[a] ASTM D6522–00 is incorporated by reference; see 40 CFR 60.17. Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

[b] You may use ASME PTC 19.10–1981, Flue and Exhaust Gas Analyses, for measuring the O_2 content of the exhaust gas as an alternative to EPA Method 3B.

[c] You may use EPA Method 18 of 40 CFR part 60, appendix A, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's Web site (*http://www.epa.gov/ttn/emc/prelim/otm11.pdf*).

[d] You may use ASTM D6420–99 (2004), Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry as an alternative to EPA Method 18 for measuring total nonmethane organic.

24. Amend Method 1 of Appendix A–1 to Part 60 by revising Sections 11.2.2, 11.4.1, and Figures 1–1 and 1–2 to read as follows:

Appendix A–1 to Part 60—Test Methods 1 Through 2F

Method 1—Sample and Velocity Traverses From Stationary Sources

* * * * *

11.2.2 Velocity and Gaseous (Non-Particulate) Traverses. Perform a stratification test 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. When the 8- and 2-diameter criterion can be met, the minimum number of traverse points for the stratification test will be 12. Test for stratification using a probe of appropriate length to measure the gas concentration at the required traverse points located according to Table 1–2. Alternatively (if the 8- and 2-diameter criterion is met), you may measure the gas concentration at three points on a line passing through the centroidal area. Space the three points at 16.7, 50.0, and 83.3 percent of the measurement line. Sample for a minimum of twice the system response time at each traverse point. Calculate the individual point and mean concentrations. If the concentration at each traverse point differs from the mean concentration for all traverse points by no more than: (a) ±5.0 percent of the mean concentration; or (b) ±0.5 ppm (whichever is less restrictive), the gas stream is considered unstratified and you may collect samples from a single point that most closely matches the mean. If the 5.0 percent or 0.5 ppm criterion is not met, but the concentration at each traverse point differs from the mean concentration for all traverse points by no more than: (a) ±10.0 percent of the mean; or (b) ±1.0 ppm (whichever is less restrictive), the gas stream is considered to be minimally stratified, and you may take samples from three points. Space the three points at 16.7, 50.0, and 83.3 percent of the measurement line. Alternatively, if a 12-point stratification test was performed and the emissions were shown to be minimally stratified (all points within ±10.0 percent of their mean or within ±1.0 ppm), and if the stack diameter (or equivalent diameter, for a rectangular stack or duct) is greater than 2.4 meters (7.8 ft), then you may use 3-point sampling and locate the three points along the measurement line exhibiting the highest average concentration during the stratification test at 0.4, 1.0 and 2.0 meters from the stack or duct wall. If the gas stream is found to be stratified because the 10.0 percent or 1.0 ppm criterion for a 3-point test is not met, locate 12 traverse points for the test in accordance with Table 1–2.

* * * * *

11.4.1 In most stationary sources, the direction of stack gas flow is essentially parallel to the stack walls. However, cyclonic flow may exist: (1) after such devices as cyclones and inertial demisters following venturi scrubbers, or (2) in stacks having tangential inlets or other duct configurations which tend to induce swirling. Determine the presence or absence of cyclonic flow at each sampling location. The following techniques are acceptable for this determination.

* * * * *

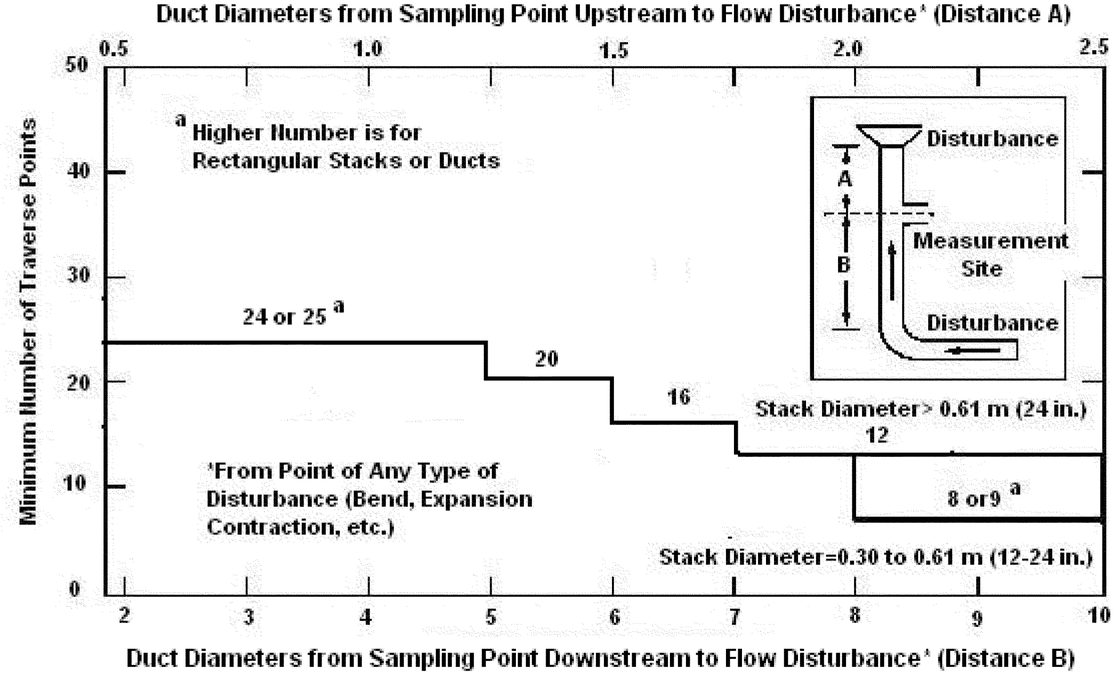

Figure 1-1. Minimum number of traverse points for particulate traverses.

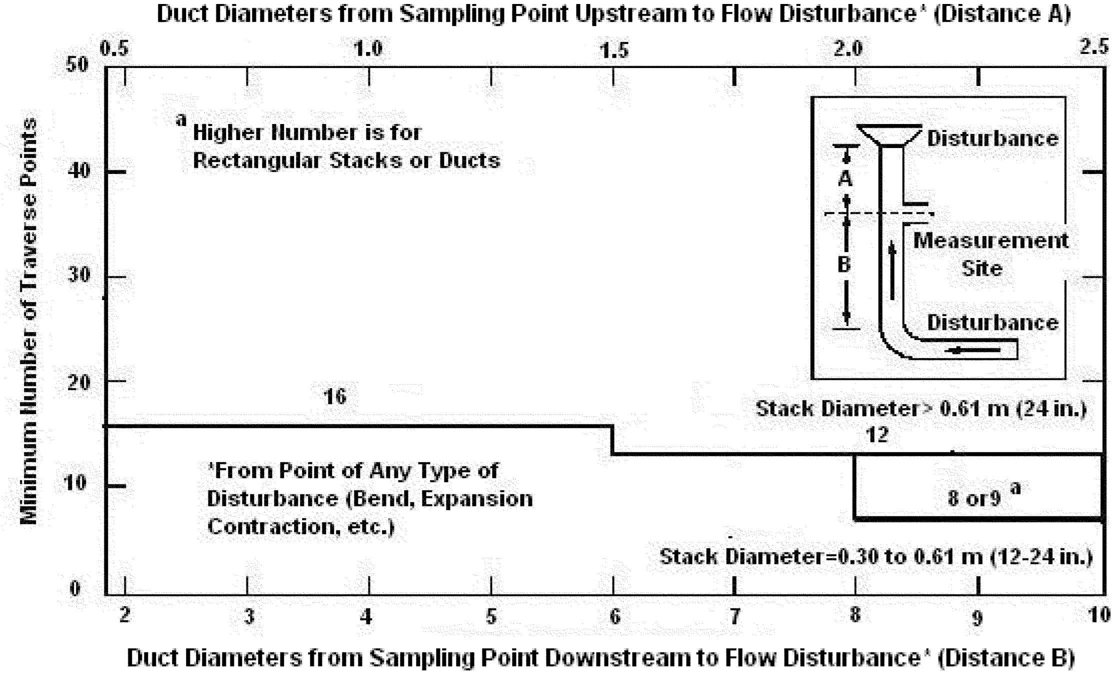

Figure 1-2. Minimum number of traverse points for velocity (nonparticulate) traverses.

* * * * *

25. Amend Method 2 of Appendix A–1 to Part 60 as follows:

a. By revising Section 8.1.
b. By revising the Note at the end of 10.1.1
c. By revising Section 10.4.
d. By adding a term to Section 12.1.
e. By revising Sections 12.6, and 12.7.

Method 2—Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

* * * * *

8.1 Set up the apparatus as shown in Figure 2–1. Capillary tubing or surge tanks installed between the manometer and pitot tube may be used to dampen ΔP fluctuations. It is recommended, but not required, that a pretest leak-check be conducted as follows: (1) blow through the pitot impact opening until at least 7.6 cm (3.0 in.) H_2O velocity head registers on the manometer; then, close off the impact opening. The pressure shall remain stable (±2.5 mm H_2O, ±0.10 in. H_2O) for at least 15 seconds; (2) do the same for the static pressure side, except using suction to obtain the minimum of 7.6 cm (3.0 in.) H_2O. Other leak-check procedures, subject to the approval of the Administrator, may be used.

* * * * *

10.1.1 * * *

Note: Do not use a Type S pitot tube assembly that is constructed such that the impact pressure opening plane of the pitot tube is below the entry plane of the nozzle (see Figure 2–7B).

* * * * *

10.4 Barometer. Calibrate the barometer used against a mercury barometer or NIST-traceable barometer prior to each field test.

* * * * *

12.1 Nomenclature

* * *

$T_{s(abavg)}$—Average absolute stack temperature, °K (°R).

* * * * *

12.6 Average Stack Gas Velocity.

$$V_s = K_p\, C_p\, \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p_i}\,\sqrt{\frac{T_{s(Abs)}}{P_s M_s}} \qquad Eq.\ 2-7$$

Where:

$$K_p = 34.97\frac{m}{\sec}\left[\frac{(g/g-mole)(mm\ Hg)}{(^{o}K)(mm\ H_2O)}\right]^{1/2} \qquad Metric$$

$$= 85.49\frac{ft}{\sec}\left[\frac{(lb/lb-mole)(in.\ Hg)}{(^{o}R)(in.\ H_2O)}\right]^{1/2} \qquad English$$

12.7 Average Stack Gas Dry Volumetric Flow Rate.

$$\mathbf{Q = 3600(1 - B_{ws})} v_s A \left[\frac{T_{std} P_s}{T_{s(Abs)} P_{std}}\right] \quad Eq. 2-8$$

* * * * *

26. Amend Method 2A of Appendix A–1 to Part 60 by revising Sections 10.3 and 12.2 to read as follows:

Method 2A—Direct Measurement of Gas Volume Through Pipes and Small Ducts

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10.3 Barometer. Calibrate the barometer used against a mercury barometer or NIST-traceable barometer prior to the field test.

* * * * *

12.2 Test Meter Calibration Coefficient.

$$Y_m = \frac{(V_{rf} - V_{ri}) P_b / T_{r(abs)}}{(V_{mf} - V_{mi})(P_b + P_g) / T_{m(abs)}} \qquad Eq. 2A-1$$

* * * * *

27. Amend Method 2B of Appendix A–1 to Part 60 by revising Section 12.1 to read as follows:

Method 2B—Determination of Exhaust Gas Volume Flow Rate from Gasoline Vapor Incinerators

* * * * *

12.1 Nomenclature.

CO_e = Mean carbon monoxide concentration in system exhaust, ppm.
$(CO_2)_a$ = Ambient carbon dioxide concentration, ppm (if not measured during the test period, may be assumed to equal 380 ppm).
$(CO_2)_e$ = Mean carbon dioxide concentration in system exhaust, ppm.
HC_e = Mean organic concentration in system exhaust as defined by the calibration gas, ppm.
Hc_i = Mean organic concentration in system inlet as defined by the calibration gas, ppm.
K_e = Hydrocarbon calibration gas factor for the exhaust hydrocarbon analyzer, unitless [equal to the number of carbon atoms per molecule of the gas used to calibrate the analyzer (2 for ethane, 3 for propane, etc.)].
K_i = Hydrocarbon calibration gas factor for the inlet hydrocarbon analyzer, unitless.
V_{es} = Exhaust gas volume, m³.
V_{is} = Inlet gas volume, m³.
Q_{es} = Exhaust gas volume flow rate, m³/min.
Q_{is} = Inlet gas volume flow rate, m³/min.
Θ = Sample run time, min.
S = Standard conditions: 20 °C, 760 mm Hg.

* * * * *

28. Amend Method 2D of Appendix A–1 to Part 60 by revising Section 10.4 to read as follows:

Method 2D—Measurement of Gas Volume Flow Rates in Small Pipes and Ducts

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10.4 Barometer. Calibrate the barometer used against a mercury barometer or NIST-traceable barometer prior to the field test.

* * * * *

29. Amend Method 3A of Appendix A–2 to Part 60 by revising Section 7.1 to read as follows:

Appendix A–2 to Part 60—Test Methods 2G through 3C

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Method 3A—Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources (Instrumental Analyzer Procedure)

* * * * *

7.1 Calibration Gas. *What calibration gases do I need?* Refer to Section 7.1 of Method 7E for the calibration gas requirements. Example calibration gas mixtures are listed below. Pre-cleaned or scrubbed air may be used for the O_2 high-calibration gas provided it does not contain other gases that interfere with the O_2 measurement.

(a) CO_2 in Nitrogen (N_2).
(b) CO_2 in air.
(c) CO_2/SO_2 gas mixture in N_2.
(d) O_2/SO_2 gas mixture in N_2.
(e) $O_2/CO_2/SO_2$ gas mixture in N_2.
(f) CO_2/NO_X gas mixture in N_2.
(g) $CO_2/SO_2/NO_X$ gas mixture in N_2.

The tests for analyzer calibration error and system bias require high-, mid-, and low-level gases.

* * * * *

30. Amend Method 4 of Appendix A–3 to Part 60 by revising Sections 9.1 and 16 to read as follows:

Appendix A–3 to Part 60—Test Methods 4 Through 5I

* * * * *

Method 4—Determination of Moisture Content in Stack Gases

* * * * *

9.1 Miscellaneous Quality Control Measures.

Section	Quality control measure	Effect
Section 8.1.1.4	Leak rate of the sampling system cannot exceed four percent of the average sampling rate or 0.00057 m³/min (0.020 cfm).	Ensures the accuracy of the volume of gas sampled. (Reference Method)
Section 8.2.1	Leak rate of the sampling system cannot exceed two percent of the average sampling rate.	Ensures the accuracy of the volume of gas sampled. (Approximation Method)

* * * * *

16.0 Alternative Procedures

16.1 The procedure described in Method 5 for determining moisture content is an acceptable alternative to Method 4.

16.2 The procedures in Method 6A for determining moisture is an acceptable alternative to Method 4.

16.3 Method 320 is an acceptable alternative to Method 4 for determining moisture.

16.4 Using F-factors to determine moisture is an acceptable alternative to Method 4. For a combustion stack not using a scrubber, the moisture content may be calculated as follows:

$$B_{ws} = B_H + B_A + B_F$$

Where:

B_A = Mole fraction of moisture in the ambient air.

$$10^{\left(\left[6.6912\left(-\frac{3144}{T+390.86}\right)\right)\right]}$$

B_F = Mole fraction of moisture from free water in the fuel.

$$B_F = \left[\frac{0.0036\,W^2 + 0.075\,W}{100}\right]\left[\frac{20.9 - O_2}{20.9}\right]$$

B_H = Mole fraction of moisture from the hydrogen in the fuel.

$$B_H = \left(1 - \frac{F_d}{F_w}\right)\frac{(20.9 - O_2)}{20.9}$$

B_{ws} = Mole fraction of moisture in the stack gas.

F_d = Volume of dry combustion components per unit of heat content at 0 percent oxygen, dscf/10^6 Btu (scm/J). See Table 19–2 in Method 19.

F_W = Volume of wet combustion components per unit of heat content at 0 percent oxygen, wet scf/10^6 Btu (scm/J). See Table 19–2 in Method 19.

%RH = Percent relative humidity (calibrated hydrometer acceptable), percent.

P_{Bar} = Barometric pressure, in. Hg (mm Hg).

T = Ambient temperature, °F (°C).

W = Percent free water by weight, percent.

O_2 = Percent oxygen in stack gas, dry basis, percent.

* * * * *

31. Amend Method 5 of Appendix A–3 to Part 60 as follows:

a. By revising Sections 6.1.1.5, 6.1.1.7, and 6.1.1.9.

b. By revising Section 7.1.3.

c. By removing Section 7.1.5.

d. By revising Sections 8.1, 8.3.4, 8.7.3, and 8.7.5.

e. By revising Sections 10.3.3, 10.4, 10.5, and 10.6.

f. By revising Equation 5–13 in Section 16.2.3.3.

g. By adding Section 16.3.

i. By adding reference 13 to Section 17.0.

Method 5—Determination of Particulate Matter Emissions From Stationary Sources

* * * * *

6.1.1.5 Filter Holder. Borosilicate glass, with a glass frit filter support and a silicone rubber gasket. Alternatively, Teflon filter holders may be used. Other materials of construction (*e.g.,* stainless steel or Viton) may be used, subject to the approval of the Administrator. The holder design shall provide a positive seal against leakage from the outside or around the filter. The holder shall be attached immediately at the outlet of the probe (or cyclone, if used).

* * * * *

6.1.1.7 Temperature Sensor. A calibrated temperature sensor (rechecked at at least one point after each test) shall be installed so that the sensing tip of the temperature sensor is in direct contact with the sample gas, and the temperature around the filter holder can be regulated and monitored during sampling.

* * * * *

6.1.1.9 Metering System. Vacuum gauge, leak-free pump, calibrated temperature sensors (rechecked at at least one point after each test), dry gas meter (DGM) capable of measuring volume to within 2 percent, and related equipment, as shown in Figure 5–1. Alternatively, an Isostack metering system may be used if all Method 5 calibrations are performed, with the exception of those related to ΔH@ in Section 9.2.1, wherein the sample flow rate system shall be calibrated in lieu of ΔH@ and shall not deviate by more than 5 percent. Other metering systems capable of maintaining sampling rates within 10 percent of isokinetic and of determining sample volumes to within 2 percent may be used, subject to the approval of the Administrator. When the metering system is used in conjunction with a pitot tube, the system shall allow periodic checks of isokinetic rates.

* * * * *

7.1.3 Water. When analysis of the material caught in the impingers is required, deionized distilled water (to conform to ASTM D 1193–77 or 91 Type 3 (incorporated by reference—see § 60.17)) with ≤0.001 percent residue shall be used. Run blanks prior to field use to eliminate a high blank on test samples, and use only water with low blank values (≤0.001 percent).

* * * * *

8.1 Pretest Preparation. It is suggested that sampling equipment be maintained according to the procedures described in APTD–0576. Alternative mercury-free thermometers may be used if the thermometers are at a minimum equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

8.3.4 Set up the train as shown in Figure 5–1 ensuring that the connections are leak-tight. Subject to the approval of the Administrator, a glass cyclone may be used between the probe and filter holder when the total particulate catch is expected to exceed 100 mg or when water droplets are present in the stack gas.

* * * * *

8.7.3 Before moving the sample train to the cleanup site, remove the probe from the sample train and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Cap the filter inlet where the probe was fastened. Remove the umbilical cord from the last impinger, and cap the impinger. If a flexible line is used between the first impinger or condenser and the filter holder, disconnect the line at the filter holder, and let any condensed water or liquid drain into the impingers or condenser. Cap off the filter holder outlet and impinger inlet. Either ground-glass stoppers, plastic caps, or serum caps may be used to close these openings.

* * * * *

8.7.5 Save a portion of the acetone used for cleanup as a blank. For each container of acetone used for cleanup, save 200 ml and place it in a glass sample container labeled ''acetone blank.'' To minimize any particulate contamination, rinse the wash bottle prior to filling from the tested container. Take 200 ml of this acetone directly from the wash bottle being used, and place it in a glass sample container labeled ''acetone blank.''

* * * * *

10.3.3 Acceptable Variation in Calibration Check. If the DGM coefficient values obtained before and after a test series differ by more than 5 percent, the test series shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (*i.e.,* before or after) gives the lower value of total sample volume.

* * * * *

10.4 Probe Heater Calibration. Use a heat source to generate air heated to selected temperatures that approximate those expected to occur in the sources to be sampled. Pass this air through the probe at a typical sample flow rate while measuring the probe inlet and outlet temperatures at various probe heater settings. For each air temperature generated, construct a graph of probe heating system setting versus probe outlet temperature. The procedure outlined in APTD–0576 can also be used. Probes constructed according to APTD–0581 need not be calibrated if the calibration curves in APTD–0576 are used. Also, probes with outlet temperature monitoring capabilities do not require calibration. As an alternative, the following single-point calibration procedure may be used. After each test run series, check the accuracy (and, hence, the calibration) of each thermocouple system at ambient temperature, or any other temperature, within the range specified by the manufacturer, using a reference thermometer (either ASTM reference thermometer or a thermometer that has been calibrated against an ASTM reference thermometer). The temperatures of the thermocouple and reference thermometers shall agree to within ±2 °F. **Note:** The probe heating system shall be calibrated before its initial use in the field.

10.5 Temperature Sensors. Use the procedure in Section 10.3 of Method 2 to calibrate in-stack temperature sensors. Dial thermometers, such as are used for the DGM and condenser outlet, shall be calibrated against mercury-in-glass thermometers. An alternative mercury-free NIST-traceable thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

10.6 Barometer. Calibrate against a mercury barometer or NIST-traceable barometer prior to the field test. Alternatively, barometric pressure may be obtained from a weather report that has been adjusted for the test point (on the stack) elevation.

* * * * *

16.2.3.3 * * *

$$V_{cr(std)} = K' \frac{P_{bar}\theta}{\sqrt{T_{amb}}} \quad \text{Eq. 5-13}$$

* * * * *

16.3 Alternative Post-Test Metering System Calibration. The following procedure may be used as an alternative to the post-test calibration described in Section 10.3.2. This alternative procedure does not detect leakages between the inlet of the metering system and the dry gas meter. Therefore, two steps must be included to make it an equivalent alternative: (1) The metering system must pass the post-test leak-check from either the inlet of the sampling train or the inlet of the metering system. Therefore, if the train fails the former leak-check, another leak-check from the inlet of the metering system must be conducted; (2) The metering system must pass the leak-check of that portion of the train from the pump to the orifice meter as described in Section 10.3.1.1.

16.3.1 After each test run, do the following:

16.3.1.1 Ensure that the metering system has passed the post-test leak-check. If not, conduct a leak-check of the metering system from its inlet.

16.3.1.2 Conduct the leak-check of that portion of the train from the pump to the orifice meter as described in Section 10.3.1.1.

16.3.1.3 Calculate Y_{qa} for each test run using the following equation:

$$Y_{qa} = \frac{\theta}{V_m}\sqrt{\frac{0.0319T_m}{\Delta H\varphi\left(P_{bar} + \frac{\Delta H_{avg}}{13.6}\right)}\left(\frac{29}{M_d}\right)}\left(\sqrt{\Delta H}\right)_{avg} \quad \text{Eq. 5-15}$$

Where:

Y_{qa} = Dry gas meter calibration check value, dimensionless.

0.0319 = $(29.92/528)(0.75)^2$(in. Hg/°R) cfm^2.

ΔH@ = Orifice meter calibration coefficient, in. H_2O.

M_d = Dry molecular weight of stack gas, lb/lb-mole.

29 = Dry molecular weight of air, lb/lb-mole.

16.3.2 After each test run series, do the following:

16.3.2.1 Average the three or more Y_{qa}'s obtained from the test run series and compare this average Y_{qa} with the dry gas meter calibration factor Y. The average Y_{qa} must be within 5 percent of Y.

16.3.2.2 If the average Y_{qa} does not meet the 5 percent criterion, recalibrate the meter over the full range of orifice settings as detailed in Section 10.3.1. Then follow the procedure in Section 10.3.3.

* * * * *

17.0 References

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13. Shigehara, Roger T., P.G. Royals, and E.W. Steward. ''Alternative Method 5 Post-Test Calibration.'' Entropy Incorporated, Research Triangle Park, NC 27709.

* * * * *

32. Amend Method 5A of Appendix A–3 to Part 60 by revising Section 8.1 to read as follows:

Method 5A—Determination of Particulate Matter Emissions From the Asphalt Processing and Asphalt Roofing Industry

* * * * *

8.1 Pretest Preparation. Unless otherwise specified, maintain and calibrate all components according to the procedure described in APTD–0576, ''Maintenance, Calibration, and Operation of Isokinetic Source-Sampling Equipment'' (Reference 3 in Method 5, Section 17.0). Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

33. Amend Method 5E of Appendix A–3 to Part 60 as follows:

a. By redesignating Sections 16 and 17 as Sections 17 and 18.

b. By adding a new Section 16.

Method 5E—Determination of Particulate Matter Emissions From the Wool Fiberglass Insulation Manufacturing Industry

* * * * *

16.0 Alternative Procedures

16.1 Total Organic Carbon Analyzer. Tekmar-Dohrmann analyzers using the single injection technique may be used as an alternative to Rosemount Model 2100A analyzers.

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34. Amend Method 5H of Appendix A–3 to Part 60 as follows:

a. By revising Section 12.1.

b. By adding Section 12.15.

c. By redesignating Sections 16 and 17 as Sections 17 and 18, respectively.

d. By adding a new Section 16.

Method 5H—Determination of Particulate Matter Emissions From Wood Heaters From a Stack Location

* * * * *

12.1 Nomenclature.

A = Sample flow rate adjustment factor.

BR = Dry wood burn rate, kg/hr (lb/hr), from Method 28, Section 8.3.

B_{ws} = Water vapor in the gas stream, proportion by volume.

C_i = Tracer gas concentration at inlet, ppmv.

C_o = Tracer gas concentration at outlet, ppmv.

C_s = Concentration of particulate matter in stack gas, dry basis, corrected to standard conditions, g/dscm (g/dscf).

E = Particulate emission rate, g/hr (lb/hr).

ΔH = Average pressure differential across the orifice meter (see Figure 5H–1), mm H_2O (in. H_2O).

L_a = Maximum acceptable leakage rate for either a post-test leak-check or for a leak-check following a component change; equal to 0.00057 cmm (0.020 cfm) or 4 percent of the average sampling rate, whichever is less.

L_1 = Individual leakage rate observed during the leak-check conducted before a component change, cmm (cfm).

L_p = Leakage rate observed during the post-test leak-check, cmm (cfm).

m_n = Total amount of particulate matter collected, mg.

M_a = Mass of residue of solvent after evaporation, mg.

N_C = Grams of carbon/gram of dry fuel (lb/lb), equal to 0.0425.

N_T = Total dry moles of exhaust gas/kg of dry wood burned, g-moles/kg (lb-moles/lb).

PR = Percent of proportional sampling rate.

P_{bar} = Barometric pressure at the sampling site, mm Hg (in.Hg).

P_{std} = Standard absolute pressure, 760 mm Hg (29.92 in.Hg).

Q_i = Gas volumetric flow rate at inlet, cfm (l/min).

Q_o = Gas volumetric flow rate at outlet, cfm (l/min).

* * * * *

12.15 Alternative Tracer Gas Flow Rate Determination.

$$Q_o = \frac{Q_i \times C_i}{C_o} \quad Eq.\,5H-10$$

Note: This gives Q for a single instance only. Repeated multiple determinations are needed to track temporal variations. Very small variations in Q_i, C_i, or C_o may give very large variations in Q_o.

* * * * *

16.0 Alternative Procedures

16.1 Alternative Stack Gas Volumetric Flow Rate Determination (Tracer Gas).

16.1.1 Apparatus.

16.1.1.1 Tracer Gas Injector System. This is to inject a known concentration of tracer gas into the stack. This system consists of a cylinder of tracer gas, a gas cylinder regulator, a stainless steel needle valve or a flow controller, a nonreactive (stainless steel or glass) rotameter, and an injection loop to disperse the tracer gas evenly in the stack.

16.1.1.2 Tracer Gas Probe. A glass or stainless steel sampling probe.

16.1.1.3 Gas Conditioning System. A gas conditioning is a system suitable for delivering a cleaned sample to the analyzer consisting of a filter to remove particulate and a condenser capable of lowering the dew point of the sample gas to less than 5 °C (40 °F). A desiccant such as anhydrous calcium sulfate may be used to dry the sample gas. Desiccants which react or absorb tracer gas or stack gas may not be used, *e.g.* silica gel absorbs CO_2.

16.1.1.4 Pump. An inert (*i.e.,* stainless steel or Teflon head) pump to deliver more than the total sample required by the manufacturer's specifications for the analyzer used to measure the downstream tracer gas concentration.

16.1.1.5 Gas Analyzer. A gas analyzer is any analyzer capable of measuring the tracer gas concentration in the range necessary at least every 10 minutes. A means of controlling the analyzer flow rate and a device for determining proper sample flow rate shall be provided unless data is provided to show that the analyzer is insensitive to flow variations over the range encountered during the test. The gas analyzer needs to meet or exceed the flowing performance specifications:

Linearity	±1 percent of full scale.
Calibration Error	≤2 percent of span.
Response Time	≤10 seconds.
Zero Drift (24 hour)	≤2 percent of full scale.
Span Drift (24 hour)	≤2 percent of full scale.
Resolution	≤0.5 percent of span.

16.1.1.6 Recorder (optional). To provide a permanent record of the analyzer output.

16.1.2 Reagents.

16.1.2.1 Tracer Gas. The tracer gas is sulfur hexafluoride in an appropriate concentration for accurate analyzer measurement or pure sulfur dioxide. The gas used must be nonreactive with the stack effluent and give minimal (< 3 percent) interference to measurement by the gas analyzer.

16.1.3 Procedure. Select upstream and downstream locations in the stack or duct for introducing the tracer gas and delivering the sampled gas to the analyzer. The inlet location should be 8 or more duct diameters beyond any upstream flow disturbance. The outlet should be 8 or more undisturbed duct diameters from the inlet and 2 or more duct diameters from the duct exit. After installing the apparatus, meter a known concentration of the tracer gas into the stack at the inlet location. Use the gas sample probe and analyzer to show that no stratification of the tracer gas is found in the stack at the measurement locations. Monitor the tracer gas concentration from the outlet location and record the concentration at 10-minute intervals or more often at the option of the tester. A minimum of three measured intervals is recommended to determine the stack gas volumetric flow rate. Other statistical procedures may be applied for complete flow characterization and additional QA/QC.

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35. Amend Method 6 of Appendix A–4 to Part 60 by revising Sections 10.2 and 10.4 to read as follows:

Appendix A–4 to Part 60—Test Methods 6 through 10B

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Method 6—Determination of Sulfur Dioxide Emissions From Stationary Sources

* * * * *

10.2 Temperature Sensors. Calibrate against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

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10.4 Barometer. Calibrate against a mercury barometer or NIST-traceable barometer prior to the field test.

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36. Amend Method 6C of Appendix A–4 to Part 60 by revising Sections 4.0 and 8.3 to read as follows:

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

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4.0 Interferences

Refer to Section 4.0 of Method 7E.

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8.3 *Interference Check.* You must follow the procedures of Section 8.2.7 of Method 7E to conduct an interference check, substituting SO_2 for NO_X as the method pollutant. For dilution-type measurement systems, you must use the alternative interference check procedure in Section 16 and a co-located, unmodified Method 6 sampling train. Quenching in fluorescence analyzers must be evaluated and remedied unless a dilution system and ambient-level analyzer is used. This may be done by preparing the calibration gas to contain within 1 percent of the absolute oxygen and carbon dioxide content of the measured gas, preparing the calibration gas in air and using vendor nomographs, or by other acceptable means.

* * * * *

37. Amend Method 7 of Appendix A–4 to Part 60 by revising Sections 4.0, 10.2, and 10.3 to read as follows:

Method 7—Determination of Nitrogen Oxide Emissions From Stationary Sources

* * * * *

4.0 Interferences

Biased results have been observed when sampling under conditions of high sulfur dioxide concentrations. At or above 2100 ppm SO_2, use five times the H_2O_2 concentration of the Method 7 absorbing solution. Laboratory tests have shown that high concentrations of SO_2 (about 2100 ppm) cause low results in Method 7 and 7A. Increasing the H_2O_2 concentration to five times the original concentration eliminates this bias. However, when no SO_2 is present, increasing the concentration by five times results in a low bias.

* * * * *

10.2 Barometer. Calibrate against a mercury barometer or NIST-traceable barometer prior to the field test.

10.3 Temperature Gauge. Calibrate dial thermometers against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

38. Amend Method 7A of Appendix A–4 to Part 60 by revising Sections 4.0 and 10.4 to read as follows:

Method 7A—Determination of Nitrogen Oxide Emissions From Stationary Sources (Ion Chromatographic Method)

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4.0 Interferences

Biased results have been observed when sampling under conditions of high sulfur dioxide concentrations. At or above 2100 ppm SO_2, use five times the H_2O_2 concentration of the Method 7 absorbing solution. Laboratory tests have shown that high concentrations of SO_2 (about 2100 ppm) cause low results in Method 7 and 7A. Increasing the H_2O_2 concentration to five times the original concentration eliminates this bias. However, when no SO_2 is present, increasing the concentration by five times results in a low bias.

* * * * *

10.4 Temperature Gauge. Calibrate dial thermometers against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

39. Amend Method 7E of Appendix A–4 to Part 60 as follows:

a. By revising Section 6.1.

b. By revising Section 7.1.1.

c. By revising Sections 8.1.2 and 8.2.5.

d. By revising Section 16.2.2.

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

* * * * *

6.1 What do I need for the measurement system? You may use any equipment and supplies meeting the following specifications:

(1) Sampling system components that are not evaluated in the system bias or system calibration error test must be glass, Teflon, or stainless steel. Other materials are potentially acceptable, subject to approval by the Administrator.

(2) The interference, calibration error, and system bias criteria must be met.

(3) Sample flow rate must be maintained within 10 percent of the flow rate at which the system response time was measured.

(4) All system components (excluding sample conditioning components, if used) must maintain the sample temperature above the moisture dew point. Ensure minimal contact between any condensate and the sample gas. Section 6.2 provides example equipment specifications for a NO_X measurement system. Figure 7E–1 is a diagram of an example dry-basis measurement system that is likely to meet the method requirements and is provided as guidance. For wet-basis systems, you may use alternative equipment and supplies as needed (some of which are described in Section 6.2), provided that the measurement system meets the applicable performance specifications of this method.

* * * * *

7.1.1 High-Level Gas. This concentration is chosen to set the calibration span as defined in Section 3.4. Choose this high-level concentration so that emission measurements will be within 20 to 100 percent of this concentration.

* * * * *

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. To test for stratification, use a probe of appropriate length to measure the NO_X (or pollutant of interest) concentration at 12 traverse points located according to Table 1–1 or Table 1–2 of Method 1. Alternatively, you may measure at three points on a line passing through the centroidal area. Space the three points at 16.7, 50.0, and 83.3 percent of the measurement line. Sample for a minimum of twice the system response time (see Section 8.2.6) at each traverse point. Calculate the individual point and mean NO_X concentrations. If the concentration at each traverse point differs from the mean concentration for all traverse points by no more than: (a) ±5.0 percent of the mean concentration; or (b) ±0.5 ppm (whichever is less restrictive), the gas stream is considered unstratified and you may collect samples from a single point that most closely matches the mean. If the 5.0 percent or 0.5 ppm criterion is not met, but the concentration at each traverse point differs from the mean concentration for all traverse points by no more than: (a) ±10.0 percent of the mean; or (b) ±1.0 ppm (whichever is less restrictive), the gas stream is considered to be minimally stratified, and you may take samples from three points. Space the three points at 16.7, 50.0, and 83.3 percent of the measurement line. Alternatively, if a 12-point stratification test was performed and the emissions shown to be minimally stratified (all points within ±10.0 percent of their mean or within ±1.0 ppm), and if the stack diameter (or equivalent diameter for a rectangular stack or duct) is greater than 2.4 meters (7.8 ft), then you may use 3-point sampling and locate the three points along the measurement line exhibiting the highest average concentration during the stratification test at 0.4, 1.2, and 2.0 meters from the stack or duct wall. If the gas stream is found to be stratified because the 10.0 percent or 1.0 ppm criterion for a 3-point test is not met, locate 12 traverse points for the test in accordance with Table 1–1 or Table 1–2 of Method 1. This stratification test may not be meaningful at sources with temporally varying emissions or where emission concentrations are low. In these cases, the stratification test is not required.

* * * * *

8.2.5 Initial System Bias and System Calibration Error Checks. Before sampling begins, determine whether the high-level or mid-level calibration gas best approximates the emissions and use it as the upscale gas. Introduce the upscale gas at the probe upstream of all sample conditioning components in system calibration mode. Record the time it takes for the measured concentration to increase to a value that is within 95 percent or 0.5 ppm (whichever is less restrictive) of a stable response for both the low-level and upscale gases. Continue to observe the gas concentration reading until it has reached a final, stable value. Record this value on a form similar to Table 7E–2.

* * * * *

16.2.2 Bag Procedure. Perform the analyzer calibration error test to document the calibration (both NO and NO_X modes, as applicable). Fill a Tedlar or equivalent bag approximately half full with either ambient air, pure oxygen, or an oxygen standard gas with at least 19.5 percent by volume oxygen content. Fill the remainder of the bag with mid- to high-level NO in N_2 (or other appropriate concentration) calibration gas. (Note that the concentration of the NO standard should be sufficiently high enough for the diluted concentration to be easily and accurately measured on the scale used. The size of the bag should be large enough to accommodate the procedure and time required. Contact the bag manufacturer for guidance on the applicability of Tedlar equivalent materials for NO.)

* * * * *

40. Amend Method 8 of Appendix A–4 to Part 60 as follows:

a. By revising Sections 11.2.1 and 11.2.2.

b. By revising two definitions in Section 12.1.

c. By revising Figure 8–1.

Method 8—Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions From Stationary Sources

* * * * *

11.2.1 Container No. 1. Shake the container holding the isopropanol solution and the filter. If the filter breaks up, allow the fragments to settle for a few minutes before removing a sample aliquot. For determination of SO_3/H_2SO_4 concentration, pipette a 10-ml aliquot of this solution into a 250-ml Erlenmeyer flask, add 2 to 4 drops of thorin indicator, and titrate to a pink endpoint using 0.0100 N barium standard solution. Repeat the titration with a second aliquot of sample, and average the titration values. Replicate titrations must agree within 1 percent or 0.2 ml, whichever is greater.

11.2.2 Container No. 2. Thoroughly mix the solution in the container holding the contents of the second and third impingers. For determination of SO_2 concentration, pipette a 100-ml aliquot of sample into a 250-ml Erlenmeyer flask. Add 40 ml of isopropanol, 2 to 4 drops of thorin indicator, and titrate to a pink endpoint using 0.0100 N barium standard solution. Repeat the titration with a second aliquot of sample, and average the titration values. Replicate titrations must agree within 1 percent or 0.2 ml, whichever is greater.

* * * * *

12.1 * * *

V_a = Volume of sample aliquot titrated, 10 ml for H_2SO_4 and 100 ml for SO_2.
V_{soln} = Total volume of solution in which the sample is contained, 1000 ml for the SO_2 sample and 250 ml for the H_2SO_4 sample.

* * * * *

* * * * *

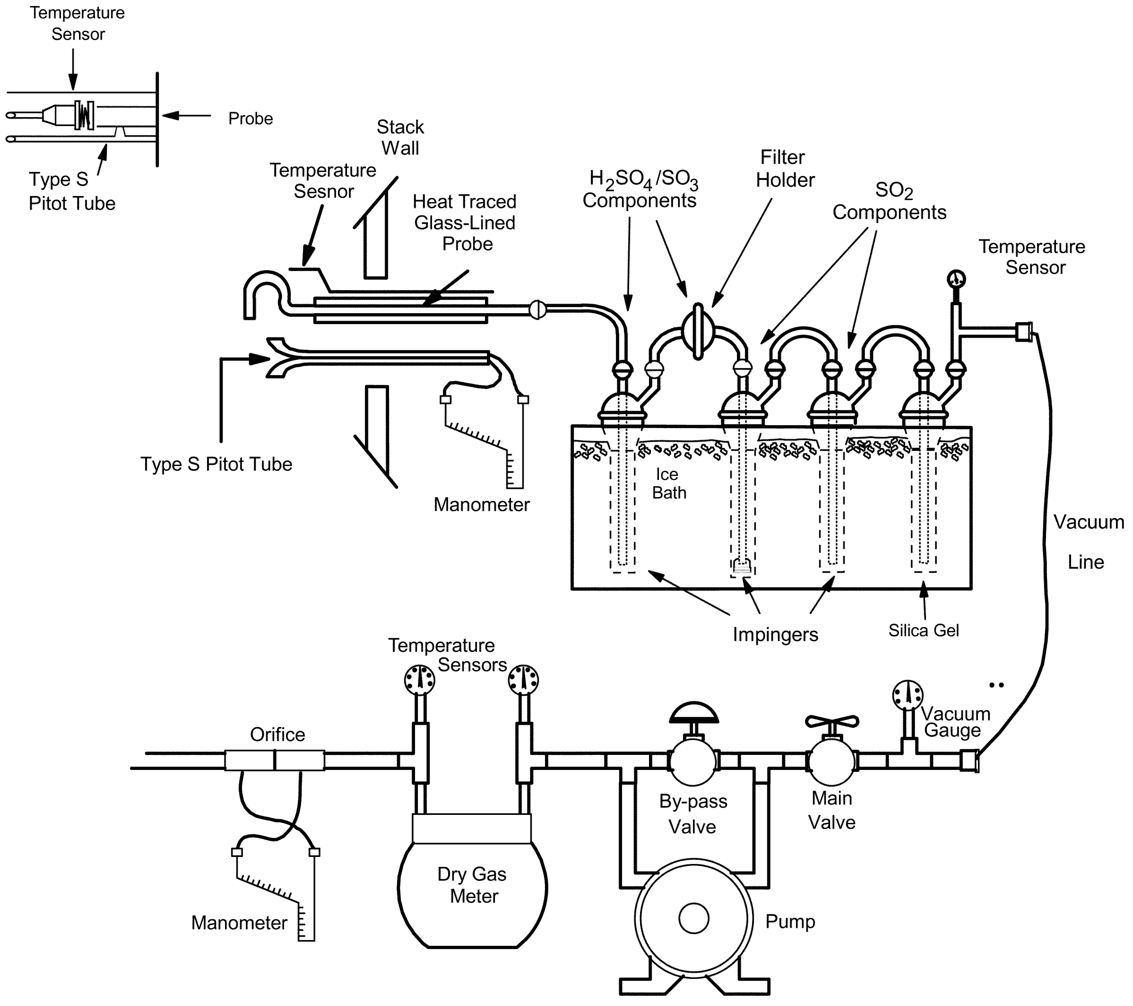

Figure 8-1. Sulfuric Acid Sampling Train.

* * * * *

41. Amend Method 10 of Appendix A–4 to Part 60 by revising Sections 6.2.5 and 8.4.2 to read as follows:

Method 10—Determination of Carbon Monoxide Emissions From Stationary Sources

* * * * *

6.2.5 Flexible Bag. Tedlar, or equivalent, with a capacity of 60 to 90 liters (2 to 3 ft^3). (Contact the bag manufacturer for guidance on the applicability of Tedlar equivalent materials for the compound of interest.) Leak-test the bag in the laboratory before using by evacuating with a pump followed by a dry gas meter. When the evacuation is complete, there should be no flow through the meter. Gas tanks may be used in place of bags if the samples are analyzed within one week.

* * * * *

8.4.2 Integrated Sampling. Evacuate the flexible bag. Set up the equipment as shown in Figure 10–1 with the bag disconnected. Place the probe in the stack and purge the sampling line. Connect the bag, making sure that all connections are leak-free. Sample at a rate proportional to the stack velocity. If needed, the CO_2 content of the gas may be determined by using the Method 3 integrated sample procedures, or by weighing an ascarite CO_2 removal tube used and computing CO_2 concentration from the gas volume sampled and the weight gain of the tube. Data may be recorded on a form similar to Table 10–1. If a tank is used for sample collection, follow procedures similar to those in Sections 8.1.2, 8.2.3, 8.3, and 12.4 of Method 25 as appropriate to prepare the tank, conduct the sampling, and correct the measured sample concentration.

* * * * *

42. Amend Method 10A of Appendix A–4 to Part 60 as follows:

a. By revising Section 2.0.

b. By revising Sections 8.2.1 and 8.2.3.

c. By revising Sections 11.1 and 11.2.

d. By revising the narrative in Section 12.3.

e. By revising Section 13.5.

Method 10A—Determination of Carbon Monoxide Emissions in Certifying Continuous Emission Monitoring Systems at Petroleum Refineries

* * * * *

2.0 Summary of Method

An integrated gas sample is extracted from the stack, passed through an alkaline permanganate solution to remove sulfur oxides and nitrogen oxides, and collected in a Tedlar or equivalent bag. (Contact the bag manufacturer for guidance on the applicability of Tedlar equivalent materials for the compound of interest.) The CO concentration in the sample is measured spectrophotometrically using the reaction of CO with *p*-sulfaminobenzoic acid.

* * * * *

8.2.1 Evacuate the bag completely using a vacuum pump. Assemble the apparatus as shown in Figure 10A–1. Loosely pack glass wool in the tip of the probe. Place 400 ml of alkaline permanganate solution in the first two impingers and 250 ml in the third. Connect the pump to the third impinger, and follow this with the surge tank, rate meter, and 3-way valve. Do not connect the bag to the system at this time.

* * * * *

8.2.3 Purge the system with sample gas by inserting the probe into the stack and drawing the sample gas through the system at 300 ml/min ±10 percent for 5 minutes. Connect the evacuated bag to the system, record the starting time, and sample at a rate of 300 ml/min for 30 minutes, or until the bag is nearly full. Record the sampling time, the barometric pressure, and the ambient temperature. Purge the system as described above immediately before each sample.

* * * * *

11.1 Assemble the system shown in Figure 10A–3, and record the information required in Table 10A–1 as it is obtained. Pipet 10.0 ml of the colorimetric reagent into each gas reaction bulb, and attach the bulbs to the system. Open the stopcocks to the reaction bulbs, but leave the valve to the bag closed. Turn on the pump, fully open the coarse-adjust flow valve, and slowly open the fine-adjust valve until the pressure is reduced to at least 40 mm Hg. Now close the coarse adjust valve, and observe the manometer to be certain that the system is leak-free. Wait a minimum of 2 minutes. If the pressure has increased less than 1 mm Hg, proceed as described below. If a leak is present, find and correct it before proceeding further.

11.2 Record the vacuum pressure (P_v) to the nearest 1 mm Hg, and close the reaction bulb stopcocks. Open the bag valve, and allow the system to come to atmospheric pressure. Close the bag valve, open the pump coarse adjust valve, and evacuate the system again. Repeat this fill/evacuation procedure at least twice to flush the manifold completely. Close the pump coarse adjust valve, open the bag valve, and let the system fill to atmospheric pressure. Open the stopcocks to the reaction bulbs, and let the entire system come to atmospheric pressure. Close the bulb stopcocks, remove the bulbs, record the room temperature and barometric pressure (P_{bar}, to nearest mm Hg), and place the bulbs on the shaker table with their main axis either parallel to or perpendicular to the plane of the table top. Purge the bulb-filling system with ambient air for several minutes between samples. Shake the samples for exactly 2 hours.

* * * * *

12.3 CO Concentration in the Bag. Calculate C_b using Equations 10A–2 and 10A–3. If condensate is visible in the bag, calculate B_w using Table 10A–2 and the temperature and barometric pressure in the analysis room. If condensate is not visible, calculate B_w using the temperature and barometric pressure at the sampling site. * * *

* * * * *

13.5 Stability. The individual components of the colorimetric reagent are stable for at least one month. The colorimetric reagent must be used within two days after preparation to avoid excessive blank correction. The samples in the bag should be stable for at least one week if the bags are leak-free.

* * * * *

43. Amend Method 10B of Appendix A–4 to Part 60 by revising Sections 2.1 and 6.2.3, and by revising the narrative in Section 12.2 to read as follows:

Method 10B—Determination of Carbon Monoxide Emissions From Stationary Sources

* * * * *

2.1 An integrated gas sample is extracted from the sampling point, passed through a conditioning system to remove interferences, and collected in a Tedlar or equivalent bag. (Contact the bag manufacturer for guidance on the applicability of Tedlar equivalent materials for the compound of interest.) The CO is separated from the sample by gas chromatography (GC) and catalytically reduced to methane (CH_4) which is determined by flame ionization detection (FID). The analytical portion of this method is identical to applicable sections in Method 25 detailing CO measurement.

* * * * *

6.2.3 Sample Injection System. Same as in Method 25, Section 6.3.1.4, equipped to accept a sample line from the bag.

* * * * *

12.2 CO Concentration in the Bag. Calculate C_b using Equations 10B–1 and 10B–2. If condensate is visible in the bag, calculate B_w using Table 10A–2 of Method 10A and the temperature and barometric pressure in the analysis room. If condensate is not visible, calculate B_w using the temperature and barometric pressure at the sampling site. * * *

* * * * *

44. Amend Method 11 of Appendix A–5 to Part 60 by revising Sections 8.5 and 10.1.2 to read as follows:

Appendix A–5 to Part 60—Test Methods 11 Through 15A

* * * * *

Method 11—Determination of Hydrogen Sulfide Content of Fuel Gas Streams in Petroleum Refineries

* * * * *

8.5 Sample for at least 10 minutes. At the end of the sampling time, close the sampling valve, and record the final volume and temperature readings. Conduct a leak-check as described in Section 8.2. A yellow color in the final cadmium sulfate impinger indicates depletion of the absorbing solution. An additional cadmium sulfate impinger should be added for subsequent samples and the sample with yellow color in the final impinger should be voided.

* * * * *

10.1.2 Temperature Sensors. Calibrate against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is at a minimum equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

45. Amend Method 12 of Appendix A–5 to Part 60 by revising Section 16.1 and adding Sections 16.4, 16.4.1, and 16.4.2 to read as follows:

Method 12—Determination of Inorganic Lead Emissions From Stationary Sources

* * * * *

16.1 Simultaneous Determination of Particulate Matter and Lead Emissions. Method 12 may be used to simultaneously determine Pb provided: (1) acetone is used to remove particulate from the probe and inside of the filter holder as specified by Method 5, (2) 0.1 N HNO_3 is used in the impingers, (3) a glass fiber filter with a low Pb background is used, and (4) the entire train contents, including the impingers, are treated and analyzed for Pb as described in Sections 8.0 and 11.0 of this method.

* * * * *

16.4 Alternative Analyzer. Inductively coupled plasma-atomic emission spectrometry (ICP–AES) may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.4.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP–AES application.

16.4.2 The limit of quantitation for the ICP–AES must be demonstrated, and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP–AES offers detection limits comparable to cold vapor atomic absorption.

* * * * *

46. Amend Method 14A of Appendix A–5 to Part 60 by adding a sentence to the end of Section 10.1.1 to read as follows:

Method 14A — Determination of Total Fluoride Emissions From Selected Sources at Primary Aluminum Production Facilities

* * * * *

10.1.1 Metering system. * * * Allowable tolerances for Y and ΔH@ are given in Figure 5–5 of Method 5 of this appendix.

* * * * *

47. Amend Method 16A of Appendix A–6 to Part 60 by revising Section 1.2 to read as follows:

Appendix A–6 to Part 60—Test Methods 16 Through 18

* * * * *

Method 16A—Determination of Total Reduced Sulfur Emissions From Stationary Sources (Impinger Technique)

* * * * *

1.2 Applicability. This method is applicable for the determination of TRS emissions from recovery boilers, lime kilns, and smelt dissolving tanks at kraft pulp mills, reduced sulfur compounds (H2S, carbonyl sulfide, and carbon disulfide) from sulfur recovery units at onshore natural gas processing facilities, and from other sources when specified in an applicable subpart of the regulations. The flue gas must contain at least 1 percent oxygen for complete oxidation of all TRS to SO_2. *Note:* If sources other than kraft pulp mills experience low oxygen levels in the emissions, the method results may be biased low.

* * * * *

48. Amend Method 18 of Appendix A–6 to Part 60 as follows:

a. By revising Sections 8.2.1.1.2, 8.2.1.4, 8.2.1.4.2.

b. By adding 8.2.1.5.2.2.

c. By revising Sections 16.1.1.12, and 16.1.3.2.

d. By revising the titles to Figures 18–3 and 18–10.

Method 18—Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

* * * * *

8.2.1.1.2 Sampling Procedure. To obtain a sample, assemble the sample train as shown in Figure 18–9. Leak-check both the bag and the container. Connect the vacuum line from the needle valve to the Teflon sample line from the probe. Place the end of the probe at the centroid of the stack or at a point no closer to the walls than 1 m, and start the pump. Set the flow rate so that the final volume of the sample is approximately 80 percent of the bag capacity. After allowing sufficient time to purge the line several times, connect the vacuum line to the bag, and evacuate until the rotameter indicates no flow. Then position the sample and vacuum lines for sampling, and begin the actual sampling, keeping the rate proportional to the stack velocity. As a precaution, direct the gas exiting the rotameter away from sampling personnel. At the end of the sample period, shut off the pump, disconnect the sample line from the bag, and disconnect the vacuum line from the bag container. Record the source temperature, barometric pressure, ambient temperature, sampling flow rate, and initial and final sampling time on the data sheet shown in Figure 18–10. Protect the bag and its container from sunlight. Record the time lapsed between sample collection and analysis, and then conduct the recovery procedure in Section 8.4.2.

* * * * *

8.2.1.4 Other Modified Bag Sampling Procedures. In the event that condensation is observed in the bag while collecting the sample and a direct interface system cannot be used, heat the bag during collection and maintain it at a suitably elevated temperature during all subsequent operations. (*Note:* Take care to leak-check the system prior to the dilutions so as not to create a potentially explosive atmosphere.) As an alternative, collect the sample gas, and simultaneously dilute it in the bag.

* * * * *

8.2.1.4.2 Second Alternative Procedure. Prefill the bag with a known quantity of inert gas. Meter the inert gas into the bag according to the procedure for the preparation of gas concentration standards of volatile liquid materials (Section 10.1.2.2), but eliminate the midget impinger section. Take the partly filled bag to the source, and meter the source gas into the bag through heated sampling lines and a heated flowmeter, or Teflon positive displacement pump. Verify the dilution factors before sampling each bag through dilution and analysis of gases of known concentration.

* * * * *

8.2.1.5.2.2 Analyze the two field audit samples as described in Section 9.2 by connecting each bag containing an audit gas mixture to the sampling valve. Calculate the results; record and report the data to the audit supervisor.

* * * * *

16.1.1.12 Flexible Bags. Tedlar or equivalent, 10- and 50-liter capacity, for preparation of standards. (Contact the bag manufacturer for guidance on the applicability of Tedlar equivalent materials for the compound of interest.)

* * * * *

16.1.3.2 Flexible Bag Procedure. Any leak-free plastic (*e.g.,* Tedlar, Mylar, Teflon) or plastic-coated aluminum (*e.g.,* aluminized Mylar) bag, or equivalent, can be used to obtain the pre-survey sample. Use new bags, and leak-check them before field use. In addition, check the bag before use for contamination by filling it with nitrogen or air and analyzing the gas by GC at high sensitivity. Experience indicates that it is desirable to allow the inert gas to remain in the bag about 24 hours or longer to check for desorption of organics from the bag. Follow the leak-check and sample collection procedures given in Section 8.2.1.

* * * * *

Figure 18–3. Preparation of Standards in Tedlar or Tedlar-Equlivalent Bags and Calibration Curve

* * * * *

Figure 18–10. Field Sample Data Sheet—Tedlar or Tedlar-Equivalent Bag Collection Method

* * * * *

49. Amend Method 23 of Appendix A–7 to Part 60 by revising Sections 2.2.7, 4.1.1.3, and 4.2.7 to read as follows:

Appendix A–7 to Part 60—Test Methods 19 Through 25E

* * * * *

Method 23—Determination of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans From Stationary Sources

* * * * *

2.2.7 Storage Container. Air-tight container to store silica gel.

* * * * *

4.1.1.3 Sample Train. It is suggested that all components be maintained according to the procedure described in APTD–0576. Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

4.2.7 Silica Gel. Note the color of the indicating silica gel to determine if it has been completely spent and make a mention of its condition. Transfer the silica gel from the fifth impinger to its original container and seal. If a moisture determination is made, follow the applicable procedures in sections 8.7.6.3 and 11.2.3 of Method 5 to handle and weigh the silica gel. If moisture is not measured, the silica gel may be disposed.

* * * * *

50. Amend Method 24 of Appendix A–7 to Part 60 by revising Section 11.2.2 to read as follows:

Method 24—Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings

* * * * *

11.2.2 Volatile Content. To determine total volatile content, use the apparatus and reagents described in ASTM D2369 (incorporated by reference; see § 60.17 for the approved versions of the standard), respectively, and use the following procedures:

* * * * *

51. Amend Method 25 of Appendix A–7 to Part 60 by revising Section 7.1.3 to read as follows:

Method 25—Determination of Total Gaseous Nonmethane Organic Emissions as Carbon

* * * * *

7.1.3 Filters. Glass fiber filters, without organic binder, exhibiting at least 99.95 percent efficiency (< 0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles. The filter efficiency test shall be conducted in accordance with ASTM Method D2986–71, 78, or 95a (incorporated by reference—see § 60.17). Test data from the supplier's quality control program are sufficient for this purpose.

* * * * *

52. Amend Method 25C of Appendix A–7 to Part 60 as follows:

a. By revising Sections 6.1.

b. By adding a new Section 8.2.3.

c. By revising Section 12.1.

d. By redesignating Equation 25C–2 in Section 12.3 as Equation 25C–3.

c. By redesignating Section 12.3 as Section 12.4.

d. By adding new Section 12.3.

Method 25C—Determination of Nonmethane Organic Compounds (NMOC) in MSW Landfill Gases

* * * * *

6.1 Sample Probe. Stainless steel, with the bottom third perforated. Teflon probe liners and sampling lines are also allowed. Non-perforated probes are allowed as long as they are withdrawn to create a gap equivalent to having the bottom third perforated. The sample probe must be capped at the bottom and must have a threaded cap with a sampling attachment at the top. The sample probe must be long enough to go through and extend no less than 0.9 m (3 ft) below the landfill cover. If the sample probe is to be driven into the landfill, the bottom cap should be designed to facilitate driving the probe into the landfill.

* * * * *

8.2.3 Driven Probes. Closed-point probes may be driven directly into the landfill in a single step. This method may not require backfilling if the probe is adequately sealed by its insertion. Unperforated probes that are inserted in this manner and withdrawn a distance from a detachable tip to create an open space are also acceptable.

* * * * *

12.1 Nomenclature.

B_w = Moisture content in the sample, fraction.

C_{N2} = Measured N_2 concentration (by Method 3C), fraction.

C_{N2Corr} = Measured N_2 concentration corrected for dilution, fraction.

C_t = Calculated NMOC concentration, ppmv C equivalent.

C_{tm} = Measured NMOC concentration, ppmv C equivalent.

P_b = Barometric pressure, mm Hg.

P_t = Gas sample tank pressure after sampling, but before pressurizing, mm Hg absolute.

P_{tf} = Final gas sample tank pressure after pressurizing, mm Hg absolute.

P_{ti} = Gas sample tank pressure after evacuation, mm Hg absolute.

P_w = Vapor pressure of H_2O (from Table 25C–1), mm Hg.

r = Total number of analyzer injections of sample tank during analysis (where j = injection number, 1 * * * r).

T_t = Sample tank temperature at completion of sampling, °K.

T_{ti} = Sample tank temperature before sampling, °K.

T_{tf} = Sample tank temperature after pressurizing, °K.

* * * * *

12.3 Measured N_2 Concentration Correction. Use the following equation to correct the measured concentration of N_2 as determined by Method 3C for dilution.

$$C_{N_2Corr} = \frac{\frac{P_{tf}}{T_{tf}}}{\frac{P_t}{T_t} - \frac{P_{ti}}{T_{ti}}}(C_{N_2}) \quad Eq.25C-2$$

* * * * *

53. Amend Method 25D of Appendix A–7 to Part 60 by revising the first sentence in Section 9.1 to read as follows:

Method 25D—Determination of the Volatile Organic Concentration of Waste Samples

* * * * *

9.1 Quality Control Samples. If audit samples are not available, prepare and analyze the two types of quality control samples (QCS) listed in Sections 9.1.1 and 9.1.2. * * *

* * * * *

54. Amend Method 26 of Appendix A–8 as follows:

a. By revising Sections 6.1.1 and 8.1.2.

b. By redesignating Sections 16 and 17 as Sections 17 and 18, respectively.

c. By adding a new Section 16.

Appendix A–8 to Part 60—Test Methods 26 Through 30B

* * * * *

Method 26—Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources Non-Isokinetic Method

* * * * *

6.1.1 Probe. Borosilicate glass, approximately ⅜-in. (9-mm) I.D. with a heating system capable of maintaining a probe gas temperature during sampling of 120 ± 14 °C (248 ± 25 °F) to prevent moisture condensation; or Teflon where stack probes are below 210 °C. If HF is a target analyte, then preconditioning of new teflon components by heating should be considered to prevent potential HF outgassing. A Teflon-glass filter in a mat configuration should be installed in the gas stream, not the filter box, to remove particulate matter from the gas stream (see Section 6.1.6).

* * * * *

8.1.2 Adjust the probe temperature and the temperature of the filter and the stopcock (*i.e.,* the heated area in Figure 26–1) to a temperature sufficient to prevent water condensation. This temperature should be greater than 120 °C (248 °F). The temperature should be monitored throughout a sampling run to ensure that the desired temperature is maintained. It is important to maintain a temperature around the probe and filter of greater than 120 °C (248 °F) since it is extremely difficult to purge acid gases off these components. (These components are not quantitatively recovered and, hence, any collection of acid gases on these components would result in potential underreporting of these emissions. The applicable subparts may specify alternative higher temperatures.)

* * * * *

16.0 Alternative Procedures

Method 26A. Method 26A, which uses isokinetic sampling equipment, is an acceptable alternative to Method 26.

* * * * *

55. Amend Method 29 of Appendix A–8 as follows:

a. By redesignating Sections 16 and 17 as Sections 17 and 18, respectively.

b. By adding a new Section 16.

Method 29—Determination of Metals Emissions From Stationary Sources

* * * * *

16.0 Alternative Procedures

16.1 Alternative Analyzer. Samples may also be analyzed by cold vapor atomic fluorescence spectrometry.

* * * * *

56. Amend Method 30B of Appendix A–8 to Part 60 as follows:

a. By revising the first paragraph in Section 8.2.2.1.

b. By revising Table 9–1 in Section 9.

c. By revising Section 10.3.

d. By revising the first paragraph in Section 11.3.

Method 30B—Determination of Total Vapor Phase Mercury Emissions From Coal-Fired Combustion Sources Using Carbon Sorbent Traps

* * * * *

8.2.2.1 Determination of Minimum Calibration Concentration or Mass. Based on your instrument's sensitivity and linearity, determine the calibration concentrations or masses that make up a representative low level calibration range. Verify that you are able to meet the multipoint calibration performance criteria in section 11.0 of this method. Select a calibration concentration or mass that is no less than 2 times the lowest concentration or mass in your calibration curve. The lowest point in your calibration curve must be at least 5, and preferably 10, times the Method Detection Limit (MDL), which is the minimum amount of the analyte that can be detected and reported. The MDL must be determined at least once for the analytical system using an MDL study such as that found in section 15.0 of the EPA Method 301 (76 FR 28673, 5/18/2011). * * *

* * * * *

9.0 Quality Assurance and Quality Control

* * * * *

TABLE 9–1—QUALITY ASSURANCE/QUALITY CONTROL CRITERIA FOR METHOD 30B

QA/QC test or specification	Acceptance criteria	Frequency	Consequences if not met
Gas flow meter calibration (At 3 settings or points).	Calibration factor (Y_i) at each flow rate must be within ±2% of the average value (Y).	Prior to initial use and when post-test check is not within ±5% of Y.	Recalibrate at 3 points until the acceptance criteria are met.
Gas flow meter post-test calibration check (Single-point).	Calibration factor (Y_i) must be within ±5% of the Y value from the most recent 3-point calibration.	After each field test. For mass flow meters, must be done on-site, using stack gas.	Recalibrate gas flow meter at 3 points to determine a new value of Y. For mass flow meters, must be done on-site, using stack gas. Apply the new Y value to the field test data.
Temperature sensor calibration	Absolute temperature measures by sensor within ±1.5% of a reference sensor.	Prior to initial use and before each test thereafter.	Recalibrate; sensor may not be used until specification is met.
Barometer calibration	Absolute pressure measured by instrument within ±10 mm Hg of reading with a mercury barometer or NIST traceable barometer.	Prior to initial use and before each test thereafter.	Recalibrate; instrument may not be used until specification is met.
Pre-test leak check	≤4% of target sampling rate	Prior to sampling	Sampling shall not commence until the leak check is passed.
Post-test leak check	≤4% of average sampling rate	After sampling	Sample invalidated.*
Analytical matrix interference test (wet chemical analysis, only).	Establish minimum dilution (if any) needed to eliminate sorbent matrix interferences.	Prior to analyzing any field samples; repeat for each type of sorbent used.	Field sample results not validated.
Analytical bias test	Average recovery between 90% and 110% for Hg^0 and $HgCl_2$ at each of the 2 spike concentration levels.	Prior to analyzing field samples and prior to use of new sorbent media.	Field samples shall not be analyzed until the percent recovery criteria has been met.
Multipoint analyzer calibration	Each analyzer reading within ±10% of true value *and* $r^2 \geq 0.99$.	On the day of analysis, before analyzing any samples.	Recalibrate until successful.
Analysis of independent calibration standard.	Within ±10% of true value	Following daily calibration, prior to analyzing field samples.	Recalibrate and repeat independent standard analysis until successful.
Analysis of continuing calibration verification standard (CCVS).	Within ±10% of true value	Following daily calibration, after analyzing ≤10 field samples, and at end of each set of analyses.	Recalibrate and repeat independent standard analysis, reanalyze samples until successful, if possible; for destructive techniques, samples invalidated.
Test run total sample volume	Within ±20% of total volume sampled during field recovery test.	Each individual sample	Sample invalidated.
Sorbent trap section 2 breakthrough.	For compliance/emissions testing: ≤10% of section 1 Hg mass for Hg concentrations >1 µg/dscm; ≤20% of section 1 Hg mass for Hg concentrations ≤1 µg/dscm For relative accuracy testing: ≤10% of section 1 Hg mass for Hg concentrations >1 µg/dscm; ≤20% of section 1 Hg mass for Hg concentrations ≤1 µg/dscm and >0.5 µg/dscm; ≤50% of section 1 Hg mass for Hg concentrations ≤0.5 µg/dscm >0.1 µg/dscm; No criterion for Hg concentrations ≤0.1 µg/dscm (must meet all other QA/QC specifications).	Every sample	Sample invalidated.*
Paired sorbent trap agreement	≤10% Relative Deviation (RD) mass for Hg concentrations >1 µg/dscm; ≤20% RD or ≤0.2 µg/dscm absolute difference for Hg concentrations ≤1 µg/dscm.	Every run	Run invalidated.*
Sample analysis	Within valid calibration range (within calibration curve).	All Section 1 samples where stack Hg concentration is ≥0.5 µg/dscm.	Reanalyze at more concentrated level if possible, samples invalidated if not within calibrated range.
Sample analysis	Within bounds of Hg^0 and $HgCl_2$ Analytical Bias Test.	All Section 1 samples where stack Hg concentration is ≥0.5 µg/dscm.	Expand bounds of Hg^0 and $HgCl_2$ Analytical Bias Test; if not successful, samples invalidated.

TABLE 9–1—QUALITY ASSURANCE/QUALITY CONTROL CRITERIA FOR METHOD 30B—Continued

QA/QC test or specification	Acceptance criteria	Frequency	Consequences if not met
Field recovery test	Average recovery between 85% and 115% for Hg^0.	Once per field test	Field sample runs not validated without successful field recovery test.

* And data from the pair of sorbent traps are also invalidated.

* * * * *

10.3 Thermocouples and Other Temperature Sensors. Use the procedures and criteria in Section 10.3 of Method 2 in Appendix A–1 to this part to calibrate in-stack temperature sensors and thermocouples. Dial thermometers shall be calibrated against mercury-in-glass thermometers or equivalent. * * *

* * * * *

11.3 Field Sample Analyses. Analyze the sorbent trap samples following the same procedures that were used for conducting the Hg^0 and $HgCl_2$ analytical bias tests. The individual sections of the sorbent trap and their respective components must be analyzed separately (*i.e.,* section 1 and its components, then section 2 and its components). All sorbent trap section 1 sample analyses must be within the calibrated range of the analytical system as specified in Table 9–1. For wet analyses, the sample can simply be diluted to fall within the calibrated range. However, for the destructive thermal analyses, samples that are not within the calibrated range cannot be re-analyzed. As a result, the sample cannot be validated, and another sample must be collected. It is strongly suggested that the analytical system be calibrated over multiple ranges so that thermally analyzed samples do fall within the calibrated range. The total mass of Hg measured in each sorbent trap section 1 must also fall within the lower and upper mass limits established during the initial Hg^0 and $HgCl_2$ analytical bias test. If a sample is analyzed and found to fall outside of these limits, it is acceptable for an additional Hg^0 and $HgCl_2$ analytical bias test to be performed that now includes this level. However, some samples (*e.g.,* the mass collected in trap section 2), may have Hg levels so low that it may not be possible to quantify them in the analytical system's calibrated range. Because a reliable estimate of these low-level Hg measurements is necessary to fully validate the emissions data, the MDL (see section 8.2.2.1 of this method) is used to establish the minimum amount that can be detected and reported. If the measured mass or concentration is below the lowest point in the calibration curve and above the MDL, the analyst must do the following: Estimate the mass or concentration of the sample based on the analytical instrument response relative to an additional calibration standard at a concentration or mass between the MDL and the lowest point in the calibration curve. This is accomplished by establishing a response factor (*e.g.,* area counts per Hg mass or concentration) and estimating the amount of Hg present in the sample based on the analytical response and this response factor. * * *

* * * * *

57. Amend Performance Specification 1 of Appendix B to Part 60 by revising Section 3.5 to read as follows:

Appendix B to Part 60—Performance Specifications

* * * * *

Performance Specification 1—Specifications and Test Procedures for Continuous Opacity Monitoring Systems in Stationary Sources

* * * * *

3.5 *Full Scale.* The maximum data display output of the COMS. For purposes of recordkeeping and reporting, full scale will be greater than 80 percent opacity.

Note: ''Full scale'' means ''span.''

* * * * *

58. Amend Performance Specification 3 of Appendix B to Part 60 by revising Section 13.2 to read as follows:

Performance Specification 3—Specifications and Test Procedures for O_2 and CO_2 Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

13.2 CEMS Relative Accuracy Performance Specification. The RA of the CEMS must be no greater than 20 percent of the mean value of the RM test data or 1.0 percent O_2 or CO_2, whichever is greater.

* * * * *

59. Amend Performance Specification 4 of Appendix B to Part 60 by revising Section 8.2 to read as follows:

Performance Specification 4—Specifications and Test Procedures for Carbon Monoxide Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

8.2 Reference Methods. Unless otherwise specified in an applicable subpart of the regulation, Method 10, 10A, 10B, or other approved alternative are the RM for this PS.

* * * * *

60. Amend Performance Specification 4B of Appendix B to Part 60 by revising Section 7.1.1 to read as follows:

Performance Specification 4B—Specifications and Test Procedures for Carbon Monoxide and Oxygen Continuous Monitoring Systems in Stationary Sources

* * * * *

7.1.1 *Calculations.* Summarize the results on a data sheet. Average the differences between the instrument response and the certified cylinder gas value for each gas. Calculate the CE results for the CO monitor according to:

$CE = | d/FS | \times 100$ (1)

Where d is the mean difference between the CEMS response and the known reference concentration, and FS is the span value. The CE for the O_2 monitor is the average percent O_2 difference between the O_2 monitor and the certified cylinder gas value for each gas.

* * * * *

61. Amend Performance Specification 7 of Appendix B to Part 60 by revising Section 8.4 and adding a reference to the end of Section 16.0. to read as follows:

Performance Specification 7—Specifications and Test Procedures for Hydrogen Sulfide Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

8.4 Relative Accuracy Test Procedure.

8.4.1 Sampling Strategy for RM Tests, Number of RM Tests, Correlation of RM and CEMS Data, and Calculations. These are the same as that in PS–2, Sections 8.4.3 (except as specified below), 8.4.4, 8.4.5, and 8.4.6, respectively.

8.4.2 Reference Methods. Unless otherwise specified in an applicable subpart of the regulation, Methods 11, 15, and 16 may be used for the RM for this PS.

8.4.2.1 Sampling Time Per Run—Method 11. A sampling run, when Method 11 (integrated sampling) is used, shall consist of a single measurement for at least 10 minutes and 0.010 dscm (0.35 dscf). Each sample shall be taken at approximately 30-minute intervals.

8.4.2.2 Sampling Time Per Run—Methods 15 and 16. The sampling run shall consist of two injections equally spaced over a 30-minute period following the procedures described in the particular method.

Note: Caution! Heater or non-approved electrical probes should not be used around explosive or flammable sources.

* * * * *

16.0 References

* * * * *

5. Letter to RAMCON Environmental Corp. from Robert Kellam, December 27, 1992.

* * * * *

62. Amend Performance Specification 11 of Appendix B to Part 60 by revising Sections 12.1(1) and (2) to read as follows:

Performance Specification 11—Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources

* * * * *

12.1 * * *

(1) Calculate the upscale drift (UD) using Equation 11–1:

$$UD = \frac{|R_{CEM} - R_U|}{FS} \times 100 \qquad \text{(Eq. 11-1)}$$

Where:

UD = The upscale (high-level) drift of your PM CEMS in percent,

R_{CEM}= The measured PM CEMS response to the upscale reference standard, and

R_U= The pre-established numerical value of the upscale reference standard.

FS = Full-scale value.

(2) Calculate the zero drift (ZD) using Equation 11–2:

$$ZD = \frac{|R_{CEM} - R_L|}{FS} \times 100 \qquad \text{(Eq. 11-2)}$$

Where:

ZD = The zero (low-level) drift of your PM CEMS in percent,

R_{CEM}= The measured PM CEMS response to the zero reference standard,

R_L = The pre-established numerical value of the zero reference standard, and

FS = Full-scale value.

* * * * *

63. Amend Performance Specification 15 of Appendix B to Part 60 by revising Sections 11.1.1.4.2 and 11.1.1.4.3 to read as follows:

Performance Specification 15—Performance Specification for Extractive FTIR Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

11.1.1.4.2 RMs Using a Grab Sampling Technique. Synchronize the RM and FTIR CEM measurements as closely as possible. For a grab sampling RM, record the volume collected and the exact sampling period for each sample. Synchronize the FTIR CEM so that the FTIR measures a spectrum of a similar cell volume at the same time as the RM grab sample was collected. Measure at least five independent samples with both the FTIR CEM and the RM for each of the minimum nine runs. Compare the run concentration averages by using the relative accuracy analysis procedure in Performance Specification 2 of Appendix B of 40 CFR part 60.

11.1.1.4.3 Continuous Emission Monitors as RMs. If the RM is a CEM, synchronize the sampling flow rates of the RM and the FTIR CEM. Each run is at least 1 hour long and consists of at least 10 FTIR CEM measurements and the corresponding 10 RM measurements (or averages). For the statistical comparison, use the relative accuracy analysis procedure in Performance Specification 2 of Appendix B of 40 CFR part 60. If the RM time constant is < ½ the FTIR CEM time constant, brief fluctuations in analyte concentrations that are not adequately measured with the slower FTIR CEM time constant can be excluded from the run average along with the corresponding RM measurements. However, the FTIR CEM run average must still include at least 10 measurements over a 1-hour period.

* * * * *

64. Amend Performance Specification 16 of Appendix B to Part 60 by revising Sections 6.1.7, 8.2.1, 9.1, 9.3, 9.4, 12.4, and 13.5 to read as follows:

Performance Specification 16—Specifications and Test Procedures for Predictive Emission Monitoring Systems in Stationary Sources

* * * * *

6.1.7 Sensor Location and Repair. We recommend you install sensors in an accessible location in order to perform repairs and replacements. Permanently-installed platforms or ladders may not be needed. If you install sensors in an area that is not accessible, you may be required to shut down the emissions unit to repair or replace a sensor. Conduct a new RATA after replacing a sensor that supplies a critical PEMS parameter if the new sensor provides a different output or scaling or changes the historical training dataset of the PEMS. Replacement of a non-critical sensor that does not cause an impact in the accuracy of the PEMS does not trigger a RATA. All sensors must be calibrated as often as needed but at least as often as recommended by the manufacturers.

* * * * *

8.2.1 Reference Methods. Unless otherwise specified in the applicable regulations, you must use the test methods in Appendix A of this part for the RM test. Conduct the RM tests at three operating levels. The RM tests shall be performed at a low-load (or production) level between the minimum safe, stable load and 50 percent of the maximum level load, at the mid-load level (an intermediary level between the low and high levels), and at a high-load level between 80 percent and the maximum load. Alternatively, if practicable, you may test at three levels of the key operating parameter (*e.g.* selected based on a covariance analysis between each parameter and the PEMS output) equally spaced within the normal range of the parameter.

* * * * *

9.1 QA/QC Summary. Conduct the applicable ongoing tests listed below.

ONGOING QUALITY ASSURANCE TESTS

Test	PEMS regulatory purpose	Acceptability	Frequency
Sensor Evaluation	All		Daily.
RAA	Compliance	3-test avg ≤10% of simultaneous analyzer or RM average.	Each quarter except quarter when RATA performed.
RATA	All	Same as for RA in Sec. 13.1	Yearly in quarter when RAA not performed.
Bias Correction	All	If $d_{avg} \leq \|cc\|$	Bias test passed (no correction factor needed).
PEMS Training	All	If $F_{critical} \geq Fr \geq 0.8$	Optional after initial and subsequent RATAs.

ONGOING QUALITY ASSURANCE TESTS—Continued

Test	PEMS regulatory purpose	Acceptability	Frequency
Sensor Evaluation Alert Test (optional).	All	See Section 6.1.8	After each PEMS training.

* * * * *

9.3 Quarterly Relative Accuracy Audits. In the first year of operation after the initial certification, perform a RAA consisting of at least three 30-minute portable analyzer or RM determinations each quarter a RATA is not performed. To conduct a RAA, follow the procedures in Section 8.2 for the relative accuracy test, except that only three sets of measurement data are required, and the statistical tests are not required. The average of the three or more portable analyzer or RM determinations must not exceed the limits given in Section 13.5. Report the data from all sets of measurement data. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly RATA in the second year, you may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, you must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA.

9.4 Yearly Relative Accuracy Test. Perform a minimum 9-run RATA at the normal operating level on a yearly basis in the quarter that the RAA is not performed. The statistical tests in Section 8.3 are not required for the yearly RATA.

* * * * *

12.4 Relative Accuracy Audit. Calculate the quarterly RAA using Equation 16–9.

$$RAA = \frac{\overline{PEMS} - \overline{RM}}{\overline{RM}} x\,100 \qquad \text{Eq. 16-9}$$

* * * * *

13.5 Relative Accuracy Audits. The average of the three portable analyzer or RM determinations must not differ from the simultaneous PEMS average value by more than 10 percent of the analyzer or RM for concentrations greater than 100 ppm or 20 percent for concentrations between 100 and 20 ppm, or the test is failed. For measurements at 20 ppm or less, this difference must not exceed 2 ppm for a pollutant PEMS and 1 percent absolute for a diluents PEMS.

* * * * *

65. Amend Procedure 1 of Appendix F to Part 60 by revising Section 6.2 to read as follows:

Appendix F to Part 60—Quality Assurance Procedures

Procedure 1—Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination

* * * * *

6.2 RAA Accuracy Calculation. Use the calculation procedure in the relevant performance specification to calculate the accuracy for the RAA. The RAA must be calculated in the units of the applicable emission standard.

* * * * *

66. Amend Procedure 2 of Appendix F to Part 60 by revising paragraphs (3) and (4) in Section 12.0 to read as follows:

Procedure 2—Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources

* * * * *

12.0 * * *

(3) How do I calculate daily upscale and zero drift? You must calculate the upscale drift using Equation 2–2 and the zero drift using Equation 2–3:

$$\mathbf{UD} = \frac{|R_{CEM} - R_U|}{FS} \times 100 \qquad \text{(Eq. 2-2)}$$

Where:

UD = The upscale drift of your PM CEMS, in percent,

R_{CEM} = Your PM CEMS response to the upscale check value, and

R_U = The upscale check value.

FS = Full-scale value.

$$\mathbf{ZD} = \frac{|R_{CEM} - R_L|}{FS} \times 100 \qquad \text{(Eq. 2-3)}$$

Where:

ZD = The zero (low-level) drift of your PM CEMS, in percent,

R_{CEM} = Your PM CEMS response of the zero check value,

R_L = The zero check value, and

(4) How do I calculate SVA accuracy? You must use Equation 2–4 to calculate the accuracy, in percent, for each of the three SVA tests or the daily sample volume check:

$$\mathbf{Accuracy} = \frac{(V_R - V_M)}{V_R} \times 100 \qquad \text{(Eq. 2-4)}$$

Where:

V_M = Sample gas volume determined/ reported by your PM CEMS (*e.g.,* dscm),
V_R = Sample gas volume measured by the independent calibrated reference device (*e.g.,* dscm) for the SVA or the reference value for the daily sample volume check.

Note: Before calculating SVA accuracy, you must correct the sample gas volumes measured by your PM CEMS and the independent calibrated reference device to the same basis of temperature, pressure, and moisture content. You must document all data and calculations.

* * * * *

67. Amend Procedure 5 of Appendix F to Part 60 by redesignating the second listing of Section 6.2.6 as Section 6.2.7.

PART 61—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

68. The authority citation for Part 61 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

69. Amend § 61.13 by revising paragraph (e)(1)(i) to read as follows:

§ 61.13 Emission tests and waiver of emission tests.

* * * * *

(e) * * *

(1) * * *

(i) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of Appendix A–3 of Part 60; Methods 6C, 7E, 9, and 10 of Appendix A–4 of Part 60; Method 18 and 19 of Appendix A–6 of Part 60; Methods 20, 22, and 25A of Appendix A–7 of Part 60; and Methods 303, 318, 320, and 321 of Appendix A of Part 63. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. ''Commercially available'' means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, *www.epa.gov/ttn/emc,* to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

* * * * *

70. Amend § 61.33 by revising paragraph (a) to read as follows:

§ 61.33 Stack sampling.

(a) Unless a waiver of emission testing is obtained under § 61.13, each owner or operator required to comply with § 61.32(a) shall test emissions from the source according to Method 104 of Appendix B to this part or according to Method 29 of Appendix A to Part 60. Method 103 of Appendix B to this part is approved by the Administrator as an alternative method for sources subject to § 61.32(a). The emission test shall be performed:

(1) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(2) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

* * * * *

71. Amend § 61.42 by revising paragraph (a) to read as follows:

§ 61.42 Emission standard.

(a) Emissions to the atmosphere from rocket-motor test sites shall not cause time-weighted atmospheric concentrations of beryllium to exceed 75 microgram minutes per cubic meter (μg-min/m^3) (4.68×10^{-9} pound minutes per cubic foot (lb-min/ft^3)) of air within the limits of 10 to 60 minutes, accumulated during any 2 consecutive weeks, in any area in which an adverse effect to public health could occur.

* * * * *

72. Amend § 61.53 by revising paragraph (d)(2) to read as follows:

§ 61.53 Stack sampling.

* * * * *

(d) * * *

(2) Method 101A in Appendix B or Method 29 in Appendix A to part 60 shall be used to test emissions as follows:

* * * * *

73. Amend § 61.164 by revising paragraphs (d)(2)(i), (e)(1)(i), and (e)(2) to read as follows:

§ 61.164 Test methods and procedures.

* * * * *

(d) * * *

(2) * * *

(i) Use Method 108 in Appendix B to this part or Method 29 in Appendix A to part 60 for determining the arsenic emission rate, g/hr (lb/hr). The emission rate shall equal the arithmetic mean of the results of three 60-minute test runs.

* * * * *

(e) * * *

(1) * * *

(i) Use Method 108 in Appendix B to this part or Method 29 in Appendix A to part 60 to determine the concentration of arsenic in the gas streams entering and exiting the control device. Conduct three 60-minute test runs, each consisting of simultaneous testing of the inlet and outlet gas streams. The gas streams shall contain all the gas exhausted from the glass melting furnace.

* * * * *

(2) Calculate the percent emission reduction for each run as follows:

$$D = \frac{(C_b - C_a)\, x\, 100}{C_b}$$

Where:

D = the percent emission reduction.

C_b = the arsenic concentration of the stack gas entering the control device, as measured by Method 108 or Method 29.

C_a = the arsenic concentration of the stack gas exiting the control device, as measured by Method 108 or Method 29.

* * * * *

74. Amend Method 101 of Appendix B to Part 61 by redesignating Sections 16 and 17 as Sections 17 and 18, respectively; and by adding a new Section 16 to read as follows:

Appendix B to Part 61—Test Methods

* * * * *

Method 101—Determination of Particulate and Gaseous Mercury Emissions From Chlor-Alkali Plants (Air Streams)

* * * * *

16.0 Alternative Procedures

16.1 Alternative Analyzer. Samples may also be analyzed by cold vapor atomic fluorescence spectrometry.

* * * * *

75. Amend Method 101A of Appendix B to Part 61 by redesignating Sections 16 and 17 as Sections 17 and 18, respectively; and by adding a new Section 16 to read as follows:

Method 101A—Determination of Particulate and Gaseous Mercury Emissions From Sewage Sludge Incinerators

* * * * *

16.0 Alternative Procedures

16.1 Alternative Analyzers.

16.1.1 Inductively coupled plasma-atomic emission spectrometry (ICP–AES) may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP–AES application.

16.1.1.2 The quality control procedures are conducted as prescribed.

16.1.1.3 The limit of quantitation for the ICP–AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP–AES offers detection limits comparable to cold vapor atomic absorption.

6.1.2 Samples may also be analyzed by cold vapor atomic fluorescence spectrometry.

* * * * *

76. Amend Method 102 in Appendix B to Part 61 by revising Section 8.1.1.1 to read as follows:

Method 102—Determination of Particulate and Gaseous Mercury Emissions From Chlor-Alkali Plants (Hydrogen Streams)

* * * * *

8.1.1.1 Calibrate the meter box orifice. Use the techniques described in APTD–0576 (see Reference 9 in Section 17.0 of Method 5 of Appendix A to Part 60). Calibration of the orifice meter at flow conditions that simulate the conditions at the source is suggested. Calibration should either be done with hydrogen or with some other gas having a similar Reynolds Number so that there is similarity between the Reynolds Numbers during calibration and during sampling. Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

77. Amend Method 104 in Appendix B to Part 61 as follows:

a. By revising Section 4.1.

b. By revising Section 11.5.3.

c. By redesignating Sections 16 and 17 as Sections 17 and 18 respectively.

d. By adding a new Section 16.

Method 104—Determination of Beryllium Emissions From Stationary Sources

* * * * *

4.1 Matrix Effects. Analysis for Be by flame atomic absorption spectrophotometry is sensitive to the chemical composition and to the physical properties (*e.g.,* viscosity, pH) of the sample. Aluminum and silicon, in particular, are known to interfere when present in appreciable quantities. The analytical procedure includes (optionally) the use of the Method of Standard Additions to check for these matrix effects, and sample analysis using the Method of Standard Additions if significant matrix effects are found to be present (see Reference 2 in Section 17.0).

* * * * *

11.5.3 Check for Matrix Effects (optional). Use the Method of Standard Additions (see Reference 2 in Section 17.0) to check at least one sample from each source for matrix effects on the Be results. If the results of the Method of Standard Additions procedure used on the single source sample do not agree to within 5 percent of the value obtained by the routine atomic absorption analysis, then reanalyze all samples from the source using the Method of Standard Additions procedure.

* * * * *

16.0 Alternative Procedures

16.1 Alternative Analyzer. Inductively coupled plasma-atomic emission spectrometry (ICP–AES) may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP–AES application.

16.1.2 Quality Assurance/Quality Control procedures, including audit material analysis, are conducted as prescribed in the method. The QA acceptance conditions must be met.

16.1.3 The limit of quantitation for the ICP–AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP–AES offers detection limits comparable to cold vapor atomic absorption.

* * * * *

78. Amend Method 108 of Appendix B to Part 61 by redesignating Sections 16 and 17 as Sections 17 and 18 respectively, and by adding a new Section 16 to read as follows:

Method 108—Determination of Particulate and Gaseous Arsenic Emissions

* * * * *

16.0 Alternative Procedures

16.1 Alternative Analyzer. Inductively coupled plasma-atomic emission spectrometry (ICP–AES) may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP–AES application.

16.1.2 Quality Assurance/Quality Control procedures, including audit material analysis, are conducted as prescribed in the method. The QA acceptance conditions must be met.

16.1.3 The limit of quantitation for the ICP–AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP–AES offers detection limits comparable to cold vapor atomic absorption.

* * * * *

79. Amend Method 108A of Appendix B to Part 61 by redesignating Sections 16 and 17 as Sections 17 and 18 respectively, and by adding a new Section 16 to read as follows:

Method 108A—Determination of Arsenic Content in Ore Samples From Nonferrous Smelters

* * * * *

16.0 Alternative Procedures

16.1 Alternative Analyzer. Inductively coupled plasma-atomic emission spectrometry (ICP–AES) may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP–AES application.

16.1.2 Quality Assurance/Quality Control procedures, including audit material analysis, are conducted as prescribed in the method. The QA acceptance conditions must be met.

16.1.3 The limit of quantitation for the ICP–AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP–AES offers detection limits comparable to cold vapor atomic absorption.

* * * * *

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

80. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

81. Amend § 63.7 by revising paragraph (c)(2)(iii)(A) to read as follows:

§ 63.7 Performance testing requirements.

* * * * *

(c) * * *

(2) * * *

(iii) * * *

(A) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of Appendix A–3 of Part 60; Methods 6C, 7E, 9, and 10 of Appendix A–4 of Part 60; Methods 18 and 19 of Appendix A–6 of Part 60; Methods 20, 22, and 25A of Appendix A–7 of Part 60; and Methods 303, 318, 320, and 321 of Appendix A of Part 63. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. ''Commercially available'' means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA web site at the following URL, *www.epa.gov/ttn/emc,* to confirm whether there is a source that can supply an audit sample for that method. If the EPA web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

* * * * *

82. Amend § 63.8 by adding a sentence to the end of paragraph (f)(6)(iii) to read as follows:

§ 63.8 Monitoring requirements.

* * * * *

(f) * * *

(6) * * *

(iii) * * * The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 8.4 of Performance Specification 2.

* * * * *

83. Amend § 63.144 by adding paragraphs (b)(5)(i)(G) and (b)(5)(i)(H) to read as follows:

§ 63.144 Process wastewater provisions—test methods and procedures for determining applicability and Group 1/Group 2 determinations (determining which wastewater streams require control).

* * * * *

(b) * * *

(5) * * *

(i) * * *

(G) *Method 8260B.* Use procedures specified in Method 8260B in the SW–846 Compendium of Methods.

(H) *Method 316.* Use Method 316 to determine formaldehyde concentration.

* * * * *

84. Amend § 63.344 by adding paragraph (c)(5) to read as follows:

§ 63.344 Performance test requirements and test methods.

* * * * *

(c) * * *

(5) The South Coast Air Quality Management District (SCAQMD) Method 205.1 (which is available by contacting the South Coast AQMD, 21865 Copley Dr., Diamond Bar, CA 91765) may be used to determine the total chromium concentration from hard and decorative chromium electroplating tanks and chromium anodizing tanks.

* * * * *

85. Amend § 63.364 by revising paragraph (e) to read as follows:

§ 63.364 Monitoring requirements.

* * * * *

(e) Measure and record once per hour the ethylene oxide concentration at the outlet to the atmosphere after any control device according to the procedures specified in § 63.365(c)(1). The owner or operator shall compute and record a 24-hour average daily. The owner or operator will install, calibrate, operate, and maintain a monitor consistent with the requirements of performance specification (PS) 8 or 9 in 40 CFR part 60, Appendix B, to measure ethylene oxide. The daily calibration requirements of section 7.2 of PS–9 or Section 13.1 of PS–8 are required only on days when ethylene oxide emissions are vented to the control device.

* * * * *

86. Amend § 63.365 by revising paragraph (b) introductory text to read as follows:

§ 63.365 Test methods and procedures.

* * * * *

(b) *Efficiency at the sterilization chamber vent.* California Air Resources Board (CARB) Method 431 or the following procedures shall be used to determine the efficiency of all types of control devices used to comply with § 63.362(c), sterilization chamber vent standard.

* * * * *

87. Amend § 63.565 by revising paragraphs (d)(5), (8), and (10) and (g) to read as follows:

§ 63.565 Test methods and procedures.

* * * * *

(d) * * *

(5) *Recovery devices.* The average VOC concentration in the vent upstream and downstream of the control device shall be determined using Method 25A or 25B of Appendix A to part 60 of this chapter for recovery devices. The average VOC concentration shall correspond to the volume measurement by taking into account the sampling system response time.

* * * * *

(8) Where Method 25, 25A, or 25B is used to measure the percent reduction in VOC, the percent reduction across the combustion or recovery device shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i}(100\%)$$

Where:

R = control efficiency of control device, percent.
E_i = mass flow rate of VOC at the inlet to the combustion or recovery device as calculated under paragraph (c)(7) of this section, kg/hr.
E_o = mass flow rate of VOC at the outlet of the combustion or recovery device, as calculated under paragraph (c)(7) of this section, kg/hr.

* * * * *

(10) Use of methods other than Method 25, 25A, or 25B shall be validated pursuant to Method 301 of Appendix A to part 63 of this chapter.

* * * * *

(g) *Baseline outlet VOC concentration.* The procedures in this paragraph shall be used to determine the outlet VOC concentration required in § 63.563(b)(4), (6), (7), and (8) for combustion devices except flare, carbon adsorbers, condenser/refrigeration units, and absorbers, respectively, and to monitor the VOC concentration as required in § 63.564(e), (g), (h), and (i). The owner or operator shall use the procedures outlined in Method 25A or 25B. For the baseline VOC concentration, the arithmetic average of the outlet VOC concentration from three test runs from paragraph (d) of this section shall be calculated for the control device. The VOC concentration shall be measured at least every 15 minutes. Compliance testing of VOC CEMS shall be performed using PS 8.

* * * * *

88. Amend § 63.750 by revising paragraph (o) to read as follows:

§ 63.750 Test methods and procedures.

* * * * *

(o) *Inorganic HAP emissions—dry particulate filter certification requirements.* Dry particulate filters used to comply with § 63.745(g)(2) or § 63.746(b)(4) must be certified by the filter manufacturer or distributor, paint/depainting booth supplier, and/or the facility owner or operator using method 319 in Appendix A of this part, to meet or exceed the efficiency data points found in Tables 1 and 2, or 3 and 4 of § 63.745 for existing or new sources respectively.

89. Amend § 63.1251 by revising the definition of ''Process vent'' to read as follows:

§ 63.1251 Definitions.

* * * * *

Process vent means a vent from a unit operation or vents from multiple unit operations within a process that are manifolded together into a common header, through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere. Examples of process vents include, but are not limited to, vents on condensers used for product recovery, bottom receivers, surge control vessels, reactors, filters, centrifuges, and process tanks. Emission streams that are undiluted and uncontrolled containing less than 50 ppmv HAP, as determined through process knowledge that no HAP are present in the emission stream or using an engineering assessment as discussed in § 63.1257(d)(2)(ii); test data using Method 18 of 40 CFR part 60, Appendix A; Method 320 of 40 CFR part 63; or any other test method that has been validated according to the procedures in Method 301 of Appendix A of this part, are not considered process vents. Process vents do not include vents on storage tanks regulated under § 63.1253, vents on wastewater emission sources regulated under § 63.1256, or pieces of equipment regulated under § 63.1255.

* * * * *

90. Amend § 63.1511 by revising paragraph (c)(9) as to read follows:

§ 63.1511 Performance test/compliance demonstration general requirements.

* * * * *

(c) * * *

(9) Method 26A for the concentration of HCl. Where a lime-injected fabric filter is used as the control device to comply with the 90 percent reduction standard, the owner or operator must measure the fabric filter inlet concentration of HCl at a point before lime is introduced to the system. Method 26 may be used in place of Method 26A where it can be demonstrated that there are no water droplets in the emission stream. This can be demonstrated by showing that the vapor pressure of water in the emission stream that you are testing is less than the equilibrium vapor pressure of water at the emission stream temperature, and by certifying that the emission stream is not controlled by a wet scrubber.

* * * * *

Subpart CCCC—National Emission Standards for Hazardous Air Pollutants: Manufacturing of Nutritional Yeast

91. Subpart CCCC of Part 63 is amended by revising Table 2 to read as follows:

TABLE 2 TO SUBPART CCCC OF PART 63—REQUIREMENTS FOR PERFORMANCE TESTS

[As stated in § 63.2161, if you demonstrate compliance by monitoring brew ethanol, you must comply with the requirements for performance tests in the following table (brew ethanol monitoring only)]

For each fed-batch fermenter for which compliance is determined by monitoring brew ethanol concentration and calculating VOC concentration in the fermenter exhaust according to the procedures in § 63.2161, you must . . .	Using . . .	According to the following requirements . . .
1. Measure VOC as propane	Method 25A*, or an alternative validated by EPA Method 301* and approved by the Administrator.	You must measure the VOC concentration in the fermenter exhaust at any point prior to the dilution of the exhaust stream.

*EPA Test Methods found in Appendix A of 40 CFR part 60.

Subpart UUUU—National Emission Standards for Hazardous Air Pollutants for Cellulose Products Manufacturing

92. Amend Subpart UUUU by revising Table 4 to read as follows:

Table 4 to Subpart UUUU of Part 63—Requirements for Performance Tests

As required in §§ 63.5530(b) and 63.5535(a), (b), (g)(1), and (h)(1), you must conduct performance tests, other initial compliance demonstrations, and CEMS performance evaluations and establish operating limits according to the requirements in the following table:

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
1. the sum of all process vents	a. each existing or new affected source.	i. select sampling port's location and the number of traverse points;	EPA Method 1 or 1A in Appendix A to 40 CFR § 63.7(d)(1)(i);	sampling sites must be located at the inlet and outlet to each control device;
		ii. determine velocity and volumetric flow rate;	EPA Method 2, 2A, 2C, 2D, 2F, or 2G in Appendix A to part 60 of this chapter;	you may use EPA Method 2A, 2C, 2D, 2F, or 2G as an alternative to using EPA Method 2, as appropriate;
		iii. conduct gas analysis; and,	(1) EPA Method 3, 3A, or 3B in Appendix A to part 60 of this chapter; or,	you may use EPA Method 3A or 3B as an alternative to using EPA Method 3; or,
			(2) ASME PTC 19.101981—Part 10; and,	you may use ASME PTC 19.10–1981—Part 10 (available for purchase from Three Park Avenue, New York, NY 10016–5990) as an alternative to using EPA Method 3B.
		iv. measure moisture content of the stack gas.	EPA Method 4 in Appendix A to part 60 of this chapter.	
2. the sum of all viscose process vents.	a. each existing or new viscose process source.	i. measure total sulfide emissions.	(1) EPA Method 15 in Appendix A to part 60 of this chapter; or	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you must conduct testing of emissions from continuous viscose process vents and combinations of batch and continuous viscose process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (c) you must conduct testing of emissions from batch viscose process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (d) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the period of the initial compliance demonstration; or
			(2) carbon disulfide and/or hydrogen sulfide CEMS, as applicable;	(a) you must measure emissions at the inlet and outlet of each control device using CEMS;

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
				(b) you must install, operate, and maintain the CEMS according to the applicable performance specification (PS–7, PS–8, PS–9, or PS–15) of 40 CFR part 60, Appendix B; and (c) you must collect CEMS emissions data at the inlet and outlet of each control device during the period of the initial compliance demonstration and determine the CEMS operating limit during the period of the initial compliance demonstration.
3. the sum of all solvent coating process vents.	a. each existing or new cellophane operation.	i. measure toluene emissions ..	(1) EPA Method 18 in Appendix A to part 60 of this chapter, or Method 320 in appendix A to part 63, or	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use EPA Method 18 or 320 to determine the control efficiency of any control device for organic compounds; for a combustion device, you must use only HAP that are present in the inlet to the control device to characterize the percent reduction across the combustion device; (c) you must conduct testing of emissions from continuous solvent coating process vents and combinations of batch and continuous solvent coating process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch solvent coating process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (e) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the initial compliance demonstration; or
			(2) ASTM D6420–99	(a) you must conduct testing of emissions at the inlet and outlet of each control device;

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
				(b) you may use ASTM D6420–99 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106) as an alternative to EPA Method 18 only where: The target compound(s) are those listed in Section 1.1 of ASTM D6420–99; and the target concentration is between 150 parts per billion by volume (ppbv) and 100 ppmv; for target compound(s) not listed in Section 1.1 of ASTM D6420–99, but potentially detected by mass spectrometry, the additional system continuing calibration check after each run, as detailed in Section 10.5.3 of the ASTM method, must be followed, met, documented, and submitted with the data report even if there is no moisture condenser used or the compound is not considered water soluble; and for target compound(s) not listed in Section 1.1 of ASTM D6420–99 and not amenable to detection by mass spectrometry, ASTM D6420–99 does not apply; (c) you must conduct testing of emissions from continuous solvent coating process vents and combinations of batch and continuous solvent coating process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch solvent coating process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and, (e) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the period of the initial compliance demonstration.
4. the sum of all cellulose ether process vents.	a. each existing or new cellulose ether operation.	i. measure total organic HAP emissions.	(1) EPA Method 18 in Appendix A to Part 60 of this chapter or Method 320 in Appendix A to Part 63, or	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use EPA Method 18 or 320 to determine the control efficiency of any control device for organic compounds; for a combustion device, you must use only HAP that are present in the inlet to the control device to characterize the percent reduction across the combustion device;

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
				(c) you must conduct testing of emissions from continuous cellulose ether process vents and combinations of batch and continuous cellulose ether process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch cellulose ether process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (e) you must collect CPMS data during the period of the initial performance test and determine the CPMS operating limit during the period of the initial performance test;
			(2) ASTM D6420–99	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use ASTM D6420–99 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106) as an alternative to EPA Method 18 only where: The target compound(s) are those listed in Section 1.1 of ASTM D6420–99; and the target concentration is between 150 ppbv and 100 ppmv; for target compound(s) not listed in Section 1.1 of ASTM D6420–99, but potentially detected by mass spectrometry, the additional system continuing calibration check after each run, as detailed in Section 10.5.3 of the ASTM method, must be followed, met, documented, and submitted with the data report even if there is no moisture condenser used or the compound is not considered water soluble; and for target compound(s) not listed in Section 1.1 of ASTM D6420–99 and not amenable to detection by mass spectrometry, ASTM D6420–99 does not apply; target concentration is between 150 ppbv and 100 ppmv for target compound(s). (c) you must conduct testing of emissions from continuous cellulose ether process vents and combinations of batch and continuous cellulose ether process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535;

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
				(d) you must conduct testing of emissions from batch cellulose ether process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (e) you must collect CPMS data during the period of the initial performance test and determine the CPMS operating limit during the period of the initial performance test.
			(3) EPA Method 25 in Appendix A to Part 60 of this chapter; or	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use EPA Method 25 to determine the control efficiency of combustion devices for organic compounds; you may not use EPA Method 25 to determine the control efficiency of noncombustion control devices; (c) you must conduct testing of emissions from continuous cellulose ether process vents and combinations of batch and continuous cellulose ether process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch cellulose ether process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (e) you must collect CPMS data during the period of the initial performance test and determine the CPMS operating limit during the period of the initial performance test; or
			(4) EPA Method 25A in Appendix A to Part 60 of this chapter.	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use EPA Method 25A if: An exhaust gas volatile organic matter concentration of 50 ppmv or less is required in order to comply with the emission limit; the volatile organic matter concentration at the inlet to the control device and the required level of control are such as to result in exhaust volatile organic matter concentrations of 50 ppmv or less; or because of the high control efficiency of the control device, the anticipated volatile organic matter concentration at the control device exhaust is 50 ppmv or less, regardless of the inlet concentration;

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
				(c) you must conduct testing of emissions from continuous cellulose ether process vents and combinations of batch and continuous cellulose ether process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch cellulose ether process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and, (e) you must collect CPMS data during the period of the initial performance test and determine the CPMS operating limit during the period of the initial performance test.
5. each toluene storage vessel	a. each existing or new cellophane operation.	i. measure toluene emissions ..	(1) EPA Method 18 in Appendix A to Part 60 of this chapter or Method 320 in Appendix A to Part 63; or	(a) if venting to a control device to reduce emissions, you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use EPA Method 18 or 320 to determine the control efficiency of any control device for organic compounds; for a combustion device, you must use only HAP that are present in the inlet to the control device to characterize the percent reduction across the combustion device; (c) you must conduct testing of emissions from continuous storage vessel vents and combinations of batch and continuous storage vessel vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535 for continuous process vents; (d) you must conduct testing of emissions from batch storage vessel vents as specified in § 63.490(c) for batch process vents, except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and, (e) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the period of the initial compliance demonstration; or
			(2) ASTM D6420–99	(a) if venting to a control device to reduce emissions, you must conduct testing of emissions at the inlet and outlet of each control device;

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
				(b) you may use ASTM D6420–99 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106) as an alternative to EPA Method 18 only where: the target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and the target concentration is between 150 ppbv and 100 ppmv; for target compound(s) not listed in Section 1.1 of ASTM D6420–99, but potentially detected by mass spectrometry, the additional system continuing calibration check after each run, as detailed in Section 10.5.3 of the ASTM method, must be followed, met, documented, and submitted with the data report even if there is no moisture condenser used or the compound is not considered water soluble; and for target compound(s) not listed in Section 1.1 of ASTM D6420–99 and not amenable to detection by mass spectrometry, ASTM D6420–99 does not apply; (c) you must conduct testing of emissions from continuous storage vessel vents and combinations of batch and continuous storage vessel vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535 for continuous process vents; (d) you must conduct testing of emissions from batch storage vessel vents as specified in § 63.490(c) for batch process vents, except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and, (e) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the period of the initial compliance demonstration.
6. the sum of all process vents controlled using a flare.	a. each existing or new affected source.	i. measure visible emissions	(1) EPA Method 22 in Appendix A to Part 60 of this chapter.	(a) you must conduct the flare visible emissions test according to § 63.11(b).
7. equipment leaks	a. each existing or new cellulose ether operation.	i. measure leak rate	(1) applicable equipment leak test methods in § 63.180; or	(a) you must follow all requirements for the applicable equipment leak test methods in § 63.180; or
			(2) applicable equipment leak test methods in § 63.1023.	(a) you must follow all requirements for the applicable equipment leak test methods in § 63.1023.

For . . .	At . . .	You must . . .	Using . . .	According to the following requirements . . .
8. all sources of wastewater emissions.	a. each existing or new cellulose ether operation.	i. measure wastewater HAP emissions.	(1) applicable wastewater test methods and procedures in §§ 63.144 and 63.145; or	(a) You must follow all requirements for the applicable wastewater test methods and procedures in §§ 63.144 and 63.145; or
			(2) applicable wastewater test methods and procedures in §§ 63.144 and 63.145, using ASTM D5790–95 as an alternative to EPA Method 624 in Appendix A to Part 163 of this chapter.	(a) you must follow all requirements for the applicable waste water test methods and procedures in §§ 63.144 and 63.145, except that you may use ASTM D5790–95 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106) as an alternative to EPA Method 624, under the condition that this ASTM method be used with the sampling procedures of EPA Method 25D or an equivalent method.
9. any emission point	a. each existing or new affected source using a CEMS to demonstrate compliance.	i. conduct a CEMS performance evaluation.	(1) applicable requirements in § 63.8 and applicable performance specification (PS–7, PS–8, PS–9, or PS–15) in Appendix B to part 60 of this chapter.	(a) you must conduct the CEMS performance evaluation during the period of the initial compliance demonstration according to the applicable requirements in § 63.8 and the applicable performance specification (PS–7, PS–8, PS–9, or PS–15) of 40 CFR part 60, Appendix B; (b) you must install, operate, and maintain the CEMS according to the applicable performance specification (PS–7, PS–8, PS–9, or PS–15) of 40 CFR part 60, Appendix B; and (c) you must collect CEMS emissions data at the inlet and outlet of each control device during the period of the initial compliance demonstration and determine the CEMS operating limit during the period of the initial compliance demonstration.

Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

93. Amend Subpart ZZZZ by revising Table 4 to read as follows:

TABLE 4 TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR PERFORMANCE TESTS

[As stated in §§ 63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE]

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE.	a. Reduce CO emissions.	i. Measure the O_2 at the inlet and outlet of the control device; and	(1) Portable CO and O_2 analyzer.	(a) Using ASTM D6522–00 (2005)[a] (heated probe not necessary; single-point sampling) (incorporated by reference, see § 63.14). Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.

TABLE 4 TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR PERFORMANCE TESTS—Continued

[As stated in §§ 63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE]

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		ii. Measure the CO at the inlet and the outlet of the control device.	(1) Portable CO and O_2 analyzer.	(a) Using ASTM D6522–00 (2005)[a] (heated probe not necessary; single-point sampling) (incorporated by reference, see § 63.14) or Method 10 of 40 CFR part 60, Appendix A. The CO concentration must be at 15 percent O_2, dry basis.
2. 4SRB stationary RICE.	a. Reduce formaldehyde emissions.	i. Sample at the centroid of the exhaust;	....	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device.	(1) Method 3 or 3A or 3B of 40 CFR part 60, Appendix A, or ASTM Method D6522–00 (2005) (heated probe not necessary; single-point sampling).	(a) Measurements to determine O_2 concentration must be made at the same time as the measurements for formaldehyde concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, Appendix A, or Test Method 320 of 40 CFR part 63, Appendix A, or ASTM D 6348–03.	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde concentration.
		iv. Measure formaldehyde at the inlet and the outlet of the control device.	(1) Method 320 or 323 of 40 CFR part 63, Appendix A; or ASTM D6348–03,[b] provided in ASTM D6348–03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130.	(a) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust.	i. Sample at the centroid of the exhaust;		(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary RICE exhaust at the sampling port location;	(1) Method 3 or 3A or 3B of 40 CFR part 60, Appendix A, or ASTM Method D6522–00 (2005) (heated probe not necessary; single-point sampling).	(a) Measurements to determine O_2 concentration must be made at the same time and location as the measurements for formaldehyde concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and,	(1) Method 4 of 40 CFR part 60, Appendix A, or Test Method 320 of 40 CFR part 63, Appendix A, or ASTM D 6348–03.	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde concentration.

TABLE 4 TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR PERFORMANCE TESTS—Continued

[As stated in §§ 63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE]

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		iv. Measure formaldehyde at the exhaust of the stationary RICE.	(1) Method 320 or 323 of 40 CFR part 63, Appendix A; or ASTM D6348–03,[b] provided in ASTM D6348–03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130.	(a) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[a] You may also use Methods 3A and 10 as options to ASTM–D6522–00 (2005). You may obtain a copy of ASTM–D6522–00 (2005) from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[b] You may obtain a copy of ASTM–D6348–03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

94. Amend Method 306 of Appendix A to Part 63 by revising Sections 2.2.1, 6.1.4, and 8.0 to read as follows:

Appendix A to Part 63—Test Methods Pollutant Measurement Methods From Various Waste Media

* * * * *

Method 306—Determination of Chromium Emissions From Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations—Isokinetic Method

* * * * *

2.2.1 Total chromium samples with high chromium concentrations (≥35 μg/L) may be analyzed using inductively coupled plasma emission spectrometry (ICP) at 267.72 nm. *Note:* The ICP analysis is applicable for this method only when the solution analyzed has a Cr concentration greater than or equal to 35 μg/L or five times the method detection limit as determined according to Appendix B in 40 CFR part 136. Similarly, inductively coupled plasma-mass spectroscopy (ICP–MS) may be used for total chromium analysis provided the procedures for ICP–MS analysis described in Method 6020 or 6020A (EPA Office of Solid Waste, publication SW–846) are followed.

* * * * *

6.1.4 Operating and maintenance procedures for the sampling train are described in APTD–0576 of Method 5. Users should read the APTD–0576 document and adopt the outlined procedures. Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

8.0 Sample Collection, Preservation, Holding Times, Storage, and Transport

Note: Prior to sample collection, consideration should be given to the type of analysis (Cr^{+6} or total Cr) that will be performed. Which analysis option(s) will be performed will determine which sample recovery and storage procedures will be required to process the sample.

* * * * *

95. Amend Method 306A of Appendix A to Part 63 by revising Section 8.2 to read as follows:

Method 306A—Determination of Chromium Emissions From Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations

* * * * *

8.2 Sample Recovery. After the train has been transferred to the sample recovery area, disconnect the tubing that connects the jar/impingers. The tester shall select either the total Cr or Cr^{+6} sample recovery option. Samples to be analyzed for both total Cr and Cr^{+6} shall be recovered using the Cr^{+6} sample option (Section 8.2.2). *Note:* Collect a reagent blank sample for each of the total Cr or the Cr^{+6} analytical options. If both analyses (Cr and Cr^{+6}) are to be conducted on the samples, collect separate reagent blanks for each analysis. Also, since particulate matter is not usually present at chromium electroplating and/or chromium anodizing operations, it is not necessary to filter the Cr^{+6} samples unless there is observed sediment in the collected solutions. If it is necessary to filter the Cr^{+6} solutions, please refer to Method 0061, Determination of Hexavalent Chromium Emissions from Stationary Sources, Section 7.4, Sample Preparation in SW–846 (see Reference 1).

* * * * *

96. Amend Method 308 of Appendix A to Part 63 by revising Section 10.1.3 to read as follows:

Method 308—Procedure for Determination of Methanol Emission From Stationary Sources

* * * * *

10.1.3 Temperature Sensors. Calibrate against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

97. Amend Method 315 of Appendix A to Part 63 by revising Sections 6.1.1 and 10.5 and by redesignating Section 8.11 as 8.1 and revising newly designated section 8.1 to read as follows:

Method 315—Determination of Particulate and Methylene Chloride Extractable Matter (MCEM) From Selected Sources at Primary Aluminum Production Facilities

* * * * *

6.1.1 Sampling train. A schematic of the sampling train used in this method is shown in Figure 5–1, Method 5, 40 CFR part 60, Appendix A. Complete construction details are given in APTD–0581 (Reference 2 in section 17.0 of this method); commercial models of this train are also available. For changes from APTD–0581 and for allowable modifications of the train shown in Figure 5–1, Method 5, 40 CFR part 60, Appendix A, see the following subsections. *Note:* The operating and maintenance procedures for the sampling train are described in APTD–0576 (Reference 3 in section 17.0 of this method). Since correct usage is important in obtaining valid results, all users should read APTD–0576 and adopt the operating and maintenance procedures outlined in it, unless otherwise specified herein. Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application. The use of grease for sealing sampling train components is not recommended because many greases are soluble in methylene chloride. The sampling train consists of the following components:

* * * * *

8.1 Pretest preparation. It is suggested that sampling equipment be maintained according to the procedures described in APTD–0576. Alternative mercury-free thermometers may be used if the thermometers are at a minimum equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

10.5 Temperature sensors. Use the procedure in Section 10.3 of Method 2, 40 CFR part 60, Appendix A to calibrate in-stack temperature sensors. Dial thermometers, such as are used for the DGM and condenser outlet, shall be calibrated against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

98. Amend Method 316 of Appendix A to Part 63 by revising Section 10.5 to read as follows:

Method 316—Sampling and Analysis for Formaldehyde Emissions From Stationary Sources in the Mineral Wool and Wool Fiberglass Industries

* * * * *

10.5 Temperature gauges: Use the procedure in Section 4.3 of EPA Method 2 to calibrate in-stack temperature gauges. Dial thermometers, such as are used for the dry gas meter and condenser outlet, shall be calibrated against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

99. Amend Method 321 of Appendix A to Part 63 by revising the definition for the term ‘‘D_f’’ after equation (2) in Section 9.3.1 to read as follows:

Test Method 321—Measurement of Gaseous Hydrogen Chloride Emissions at Portland Cement Kilns by Fourier Transform Infrared (FTIR) Spectroscopy

* * * * *

9.3 * * *

DF = Dilution Factor (Total flow/Spike flow). Total flow = spike flow plus effluent flow.

* * * * *

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