

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

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* * * NOTE: EPA did not approve PART Env-A 810 AIR POLLUTION CONTROL EQUIPMENT MONITORING PLAN; ADDITIONAL TESTING AND MONITORING into the New Hampshire State Implementation Plan.

* * * * NOTE: EPA did not approve these provisions into the New Hampshire State Implementation Plan.

STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES

AIR RESOURCES DIVISION

CHAPTER ENV-A 800 TESTING AND MONITORING PROCEDURES

CHAPTER ENV-A 800 TESTING AND MONITORING PROCEDURES

Statutory Authority: RSA 125-C:6, XI, XII

PART Env-A 801 PURPOSE, APPLICABILITY, AND SUBMISSIONS

Env-A 801.01 Purpose. The purpose of this chapter is to establish minimum testing and monitoring procedures, calculation procedures, standards, and requirements in order to determine compliance with applicable state and federal statutes and rules.

Env-A 801.02 Applicability.

(a) The owner or operator of a stationary source, area source, or device, who is required to perform testing or monitoring to determine compliance with RSA 125-C, any permit issued by the department under RSA 125-C, or the requirements of other provisions of Env-A 300 et seq., NH Rules Governing the Control of Air Pollution, shall follow the procedures specified in this chapter.

(b) * * * *

(c) The owner or operator of a source subject to Env-A 3200, NOx Budget Trading Program, shall comply with the testing and monitoring requirements specified in this chapter and in Env-A 3200, but shall follow the requirements of Env-A 3200 in case of conflict between the 2 chapters.

(d) * * * *

Env-A 801.03 Submission to and Other Contact with DES. Any application, request, report, notification, or other information required or allowed by this chapter to be provided to the department and any notification required or allowed by this chapter to be provided to the department by telephone, fax, or email shall be submitted or directed as specified in Appendix B.

PART Env-A 802 COMPLIANCE STACK TESTING AND RELATIVE ACCURACY TEST AUDIT PROCEDURES FOR STATIONARY SOURCES

Env-A 802.01 Purpose. The purpose of this part is to establish minimum standards and

requirements for performing compliance stack tests, and relative accuracy test audits (RATAs) for certification of continuous emissions monitoring (CEM) systems, to ensure that the collected data are accurate and representative of source operations.

Env-A 802.02 Stack Testing Requirements.

- (a) A compliance stack emissions test shall conform to the following:
 - (1) The general requirements of 40 CFR 60.8(a), (b), (d), (e), and (f); and
 - (2) The test methods contained in 40 CFR 60, Appendix A, 40 CFR 51, Appendix M, or any other stack test method promulgated by the U.S. Environmental Protection Agency (EPA), or any alternative, conditional or other test method approved by the EPA, or any alternative method approved by the department in accordance with Env-A 809.
- (b) An owner or operator shall sample emissions at locations and sampling points that will provide representative measurements of the actual emissions during source operation at the time of the test.
- (c) The owner or operator shall perform a stratification check at each measurement location where a determination of a gas concentration is required following the method specified in 40 CFR 60, Appendix A, Method 7E, section 8.1.2.
- (d) A Prior to each compliance stack test or RATA that includes a measurement of stack volumetric flow rate, the owner or operator shall perform a verification of the absence of cyclonic flow following the method and acceptance criteria specified in 40 CFR 60, Appendix A, Method 1.
- (e) In order to optimize the performance of a CEM system prior to conducting a RATA, the owner or operator may perform preliminary trial runs, which include routine and non-routine calibration adjustments, as described in section 2.1.3 of Appendix B of 40 CFR 75, at the zero or upscale calibration gas levels, provided that:
 - (1) If any other corrective maintenance, repair, re-linearization, or reprogramming of the CEM system is conducted the CEM system shall be considered out-of-control as defined in Env-A 808.01(j); and
 - (2) All emission data from the CEM system shall be considered invalid from the hour the corrective maintenance, repair, re-linearization, or reprogramming is conducted until a successful RATA is completed.
- (f) If during a trial run prior to conducting a RATA the relative accuracy criteria specified in 40 CFR 60 or 40 CFR 75, as applicable, are not met, then:
 - (1) The trial run shall be counted as an aborted RATA attempt;

- (2) The CEM system shall be considered out-of-control as defined in Env-A 808.01(j); and
- (3) All emission data from the CEM system from the hour in which the RATA relative accuracy criteria is not met until a successful RATA is completed shall be invalid.

Env-A 802.03 Pre-test Notice.

- (a) At least 30 days prior to the commencement of source testing, unless a longer period of notification is necessary to comply with a federal testing requirement, the owner or operator shall notify the department of the date(s) of any planned compliance stack testing or RATA testing.
- (b) The department shall require the rescheduling of any compliance stack emissions test or RATA if the staff necessary to observe the test is not available.

Env-A 802.04 Pre-test Protocol. Except for visible emissions compliance testing required by Env-A 802.12 or testing subject to Env-A 802.06, at least 30 days prior to the commencement of source testing, unless an earlier submittal is necessary to comply with a federal testing requirement, the owner or operator shall submit to the department a pre-test protocol with the following information:

- (a) The facility name, address, telephone number, and contact person, and email address;
- (b) The name of the contractor testing company, company contact, telephone Number, and email address;
- (c) The reasons for performing the compliance stack test or RATA;
- (d) A complete test program description, including all test locations, all sampling points within the stack(s) or duct(s), sampling durations, number of test runs, and for multi-day tests, a schedule of the complete test program;
- (e) A description of the process or device to be tested;
- (f) A description of the operational mode of the process and any associated air pollution control equipment used during the testing period;
- (g) A list of operational and process data to be collected;
- (h) A list of test methods to be used, stack test data to be collected, and calculations that will be used to determine emissions;
- (i) A description of any requested alternatives or deviations from standard EPA testing

methods or from the requirements of this part, including the following information:

- (1) The change that is being requested;
 - (2) The reason the change is being requested; and
 - (3) The effect that change is anticipated to have on the results;
- (j) A list of calibration methods and sample data sheets;
- (k) A description of pre-test and sampling equipment preparation procedures;
- (l) A description of the sampling equipment set-up, sample collection and recovery, and analysis methods done on-site;
- (m) A description of quality assurance procedures specific to the testing, including any blanks and audit samples used;
- (n) A description of standard operating procedures (SOPs) for laboratory analysis of samples, or reference to SOPs already on file with the department;
- (o) A description of all chain-of-custody procedures for any samples being sent to an independent laboratory; and
- (p) A description of facility safety and emergency response procedures applicable to the area of the facility in which the test will occur.

Env-A 802.05 Pre-test Meeting.

- (a) Subject to Env-A 802.06, at least 15 days prior to the test date, the owner or operator and any contractor retained by the owner or operator to conduct the test shall meet with a department representative in person or over the telephone.
- (b) The details of the test, the testing schedule, and the process conditions under which the data shall be collected, shall be finalized at the pre-test meeting.
- (c) A pre-test meeting may be held less than 15 days prior to the test date so long as department staff are available for the meeting and implementation of any testing or operation changes resulting from the meeting can be carried out prior to the scheduled test date and the scheduled test integrity is not jeopardized.

Env-A 802.06 Repeating a Compliance Stack Test. An owner or operator that repeats a compliance stack test or RATA on the same source shall not be required to submit another pre-test protocol or attend another pre-test meeting as specified in Env-A 802.04 and Env-A 802.05, provided that the following conditions are met:

- (a) The department shall have approved the final report of the previous compliance stack test or RATA as submitted by the owner or operator and the stack testing contractor;
- (b) The owner or operator uses the same stack testing contractor;
- (c) The owner or operator shall either:
 - (1) Follow all stack testing and plant operating conditions specified in the previously-accepted pre-test protocol; or
 - (2) Specify in detail any deviations from the previously-accepted pre-test protocol in the letter described in (d) below; and
- (d) The owner, operator, or stack testing contractor shall submit a letter to the department referencing the previously-approved pre-test protocol and pre-test meeting and identifying in detail any deviations from the previously accepted pre-test protocol or pre-test meeting.

Env-A 802.07 Scheduling Changes.

- (a) The owner or operator shall notify the department by telephone, fax, or electronic mail prior to any proposed changes in the testing schedule for a compliance stack test or RATA.
- (b) The owner or operator shall obtain prior approval from the department, which shall be based on staff availability, of any new date for a compliance stack test or RATA.

Env-A 802.08 Calibration Data for Stack Sampling Equipment.

- (a) The owner or operator shall provide calibration data for any sampling equipment used during the compliance stack test or RATA to the department upon request during the day of testing.
- (b) The owner or operator shall provide copies of all calibration and field test data taken during the testing, including failed runs, to the department upon request.

Env-A 802.09 Alternative Testing Methods During a Test. The department shall approve deviations from the agreed-upon test method or pre-test protocol only if the following criteria are met:

- (a) The owner or operator informs department personnel assigned to the compliance stack test or RATA of the following:
 - (1) The deviation from the testing method or planned operational mode of the source;
 - (2) The reason(s) for the deviation; and

- (3) The implications of such a deviation; and
- (b) The owner or operator provides technical justification showing that allowance of such deviation will not affect the accuracy of the compliance stack test or RATA.

Env-A 802.10 Operating Conditions During a Compliance Stack Test or RATA.

- (a) A compliance stack test shall be conducted under one of the following operating conditions:
 - (1) Between 90 and 100 percent, inclusive, of maximum production rate or rated capacity;
 - (2) A production rate at which maximum emissions occur; or
 - (3) At such operating conditions agreed upon during a pre-test meeting conducted pursuant to Env-A 802.05.

- (b) A RATA shall be conducted:

- (1) At a minimum of 50% of maximum production rate or rated capacity of the device on which the facility's CEM system is installed; and
- (2) At any other condition if necessary to comply with an applicable federal requirement.

Env-A 802.11 Report Submission Requirements.

- (a) The owner or operator shall submit a report to the department that contains the information specified in (b), below, to document the results of the compliance stack test, no more than 60 days after completion of testing, and in (c) below, to document the results of the RATA testing, no more than 45 days after completion of the RATA.
- (b) The compliance stack test report shall contain the following information:
 - (1) All the information required for the pre-test protocol as described in Env-A 802.04;
 - (2) All test data;
 - (3) All calibration data;
 - (4) Process data agreed by the department and the owner or operator agreed would be collected;

- (5) All test results;
- (6) A description of any discrepancies or problems that occurred during testing or sample analysis;
- (7) An explanation of how discrepancies or problems were treated and the effect, if any, on the final results; and
- (8) A list and description of all equations used in the test report, including sample calculations for each equation used and a calculation showing all inputted values for each test run.

(c) The RATA testing report shall contain the following information:

- (1) All the information required in the pre-test protocol as described in Env-A 802.04;
- (2) All the calibration data for the reference method monitoring system;
- (3) Process data that documents the load or operating condition at which the RATA was conducted;
- (4) All minute-averaged data from both the reference method monitoring system and facility CEM system for the time period of each RATA run;
- (5) A description of any discrepancies or problems that occurred during testing;
- (6) An explanation of how discrepancies or problems were treated and the effect, if any, on the final results; and
- (7) A list and description of all calculations and equations used in the test report to determine the relative accuracy of the facility's CEM system, including, for each calculation or equation, sample calculations showing the actual inputted values from the testing.

Env-A 802.12 Visible Emissions Testing Pursuant to 40 CFR 60 Subpart OOO. The owner or operator of a non-metallic mineral processing plant that is required by Env-A 2800 to conduct visible emissions testing in accordance with 40 CFR 60 Subpart OOO shall:

(a) Notify the department at least 7 days prior to conducting the testing by providing the following:

- (1) The name, mailing address, telephone number, and contact information of the owner of the non-metallic processing plant;

(2) The name, mailing address, telephone number, and contact information of the consultant or company conducting the visible emissions testing of the non-metallic processing plant;

(3) The address of the physical location where the non-metallic processing plant will be operated; and

(4) For each piece of equipment, including but not limited to crushers, grinding mills, bucket elevators, bagging operations, loading stations, conveyors, and screens, that is a component of the non-metallic processing plant and subject to the visible emissions standards of Env-A 2800, the following information:

a. A description of the equipment and year of installation;

b. The manufacturer of the equipment;

c. The serial number of the equipment; and

d. The maximum throughput of the equipment;

(b) Conduct the visible emissions testing within 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever is sooner;

(c) No later than 60 days after the visible emissions testing is performed, file with the department a summary report of the results of the visible emissions testing that includes the following:

(1) The emission points that were observed and where visible emissions were assessed;

(2) The rate of processing of material through the non-metallic mineral processing plant during the test;

(3) An indication of whether each emission point passed or failed the visible emissions test;

(4) The name of the person that performed the visible emissions testing, and the date the person was most recently certified to perform US EPA Test Method 9 prior to the date of the test; and

(5) A copy of the Method 9 certification for the person(s) that performed the visible emissions test; and

(d) Retain the data sheets completed during the visible emissions testing by the US EPA Method 9-certified observer at the facility and make such data sheets available to the department upon request.

Env-A 802.13 Compliance Stack Testing for Emissions of Nitrogen Oxides (NO_x) or Carbon Monoxide. An owner or operator of a source required to conduct compliance stack testing for either NO_x or CO shall simultaneously conduct compliance stack testing for both NO_x and CO.

PART Env-A 803 NO_x RACT TESTING REQUIREMENTS

Env-A 803.01 Purpose. The purpose of this part is to specify the testing requirements for demonstrating compliance with Env-A 1300 relative to oxides of nitrogen (NO_x).

Env-A 803.02 Initial Compliance Stack Testing for NO_x.

(a) Owners and operators of all sources subject to Env-A 1300 other than those devices specified in Env-A 803.05 and those sources whose owners or operators opt out of the NO_x RACT regulation in accordance with Env-A 1301.02(m) shall conduct an initial compliance stack test in accordance with Env-A 802 to demonstrate compliance with the applicable NO_x RACT emission standards and control options specified in Env-A 1303 through Env-A 1313.

(b) The initial compliance stack test required by (a), above, shall be performed:

(1) For an existing device, within 120 calendar days of the date the device becomes subject to Env-A 1300; or

(2) For a new source or device, by the earlier of 60 days of achieving the maximum production rate or 180 days from startup.

Env-A 803.03 Periodic Compliance Stack Testing for NO_x.

(a) Owners or operators of stationary sources subject to Env-A 1300, with the exception of those devices specified in Env-A 803.05, those sources whose owners or operators opted out of the NO_x RACT regulation in accordance with Env-A 1301.02(m), and those sources with a NO_x continuous emission monitoring system certified, operated, and maintained in accordance with Env-A 808, shall conduct periodic compliance stack testing in accordance with Env-A 802 to demonstrate compliance with the applicable NO_x RACT air pollution control requirements specified in Env-A 1303 through Env-A 1313.

(b) The periodic compliance stack testing required by (a), above, shall be conducted at least once every 3 years, or within 12 calendar quarters, after the date of the initial compliance stack test.

Env-A 803.04 Test Methods for Compliance Stack Testing for NO_x.

(a) Subject to (b), below, the following test methods shall be used for the compliance stack testing required by Env-A 803.02 and Env-A 803.03, as applicable:

- (1) Method 7, 7A, 7C, 7D or 7E as described in 40 CFR 60, Appendix A, to determine NO_x concentrations in stack gases;
- (2) Method 10 as described in 40 CFR 60, Appendix A, to determine carbon monoxide concentrations in stack gases;
- (3) Methods 1 and 2, 2C, 2F, 2G, or 2H, as described in 40 CFR 60, Appendix A, to determine the exit flow rate of stack gases;
- (4) Method 3 or 3A as described in 40 CFR 60, Appendix A, to determine carbon dioxide, oxygen, excess air and molecular weight, dry basis, of stack gases; and
- (5) Method 4 as described in 40 CFR 60, Appendix A, to determine the volume fraction of water vapor in stack gases.

(b) The owner or operator may use Method 20 as described in 40 CFR 60, Appendix A, in lieu of the methods identified in (a), above, to determine NO_x concentrations in stationary gas turbine stack gases.

Env-A 803.05 Testing for Small Boilers and Emergency Generators. An owner or operator of any of the following boilers or emergency generators shall comply with the requirements of Env-A 803.06:

- (a) Utility boilers subject to Env-A 1303 with heat input rates of at least 5,000,000 Btu per hour but less than 50,000,000 Btu per hour;
- (b) Steam electric boilers subject to Env-A 1304 with heat input rates of at least 5,000,000 Btu per hour but less than 50,000,000 Btu per hour;
- (c) Industrial boilers subject to Env-A 1305 with heat input rates of at least 5,000,000 Btu per hour but less than 50,000,000 Btu per hour;
- (d) Emergency generators subject to Env-A 1311 that allow for manual adjustment of the air-to-fuel ratio or ignition timing in order to affect the combustion process; and
- (e) Auxiliary boilers subject to Env-A 1312 with heat input rates of at least 5,000,000 Btu per hour but less than 50,000,000 Btu per hour.

Env-A 803.06 Gaseous Concentration Measurements for Small Boilers and Emergency Generators.

(a) The owner or operator of a small boiler or an emergency generator described in Env-A 803.05 shall perform applicable gaseous concentration measurements, before and after the tune-up, for nitrogen oxides (NO_x), carbon monoxide (CO), and oxygen (O₂) as specified in (b) through (g), below.

(b) Subject to (c), below, the gaseous concentration measurements shall be made using:

(1) An analyzer meeting the specifications set forth in the applicable sections of 40 CFR 60, Appendix B, Performance Specifications 2 through 4;

(2) A portable extractive monitor using an electrochemical sensor for performing the gas concentration measurement; or

(3) An alternative portable extractive monitor at least as accurate as the analyzer using an electrochemical sensor as specified in (b)(2), with the prior approval of the department and in accordance with Env-A 809.

(c) A concentration monitor shall be operated following the procedures specified by the manufacturer.

(d) A concentration monitor shall be calibrated for each gas being measured:

(1) At least as frequently as recommended by the manufacturer; and

(2) No earlier than 12 months prior to its use under this section.

(e) Documentation of the most recent calibration of the concentration monitor shall be maintained on-site.

(f) All measurements shall be recorded after stable operation of the boiler has been reached and shall be made on either a dry or wet basis, as long as the same basis is used for all gas concentration measurements.

(g) All concentration measurements shall be maintained on site.

PART Env-A 804 VOLATILE ORGANIC COMPOUND TESTING

Env-A 804.01 Purpose. The purpose of this part is to specify volatile organic compound (VOC) liquid and VOC gas testing, measurement, and calculation requirements.

Env-A 804.02 Applicability. This part shall apply to all sources subject to Env-A 1200, Volatile Organic Compounds (VOCs) Reasonably Available Control Technology (RACT).

Env-A 804.03 Indication of the VOC Content of a Coating.

- (a) VOC coating information based upon supplier or stationary source formulation data shall be prima facie evidence of the actual VOC content of the coating.
- (b) An owner or operator relying on supplier formulation data to determine the actual VOC content of a coating shall record all of the information required by the VOC data sheet found on page II-2 of EPA document EPA-450/3-84-019, Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings, 1984.
- (c) An owner or operator relying on stationary source formulation data to determine the actual VOC content of a coating shall record all of the information required by the VOC data sheet found on page III-2 of EPA document EPA-450/3-84-019, Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings, 1984.

Env-A 804.04 Determination of Compliance for VOC Coatings.

- (a) To determine a facility's compliance with Env-A 1200, the owner or operator shall use one of the following methods, as applicable:
 - (1) Method 24 as described in 40 CFR 60, Appendix A, using the 60-minute bake time procedure for test ASTM D 2369-01; or
 - (2) Method 24A as described in 40 CFR 60, Appendix A.
- (b) Where one or more coating or diluent of the coating formulation chemically reacts with another coating or diluent, in lieu of the methods specified in (a) above, the owner or operator shall:
 - (1) Obtain separate samples of each coating or diluent;
 - (2) Mix the coatings or diluents in a container in the same proportions as those in the formulation, as applied;
 - (3) Keep the container in which mixing takes place closed between additions and during mixing;
 - (4) Hold approximately 100 ml of the mixture in a container designed and chosen to minimize headspace prior to withdrawing a sample;
 - (5) Withdraw a sample from the mixture, transfer the sample to a tared dish, and allow it to stand for a minimum of one hour, but not more than 24 hours, prior to conducting a Method 24 or 24A analysis; and
 - (6) Conduct a Method 24 or 24A analysis of the coating sample.

Env-A 804.05 Calculation of VOC Content of a Coating Formulation. The owner or operator of a VOC source subject to a pounds VOC per gallon of coating standard as specified in Env-A 1200, which uses a coating that contains more than one VOC component, shall calculate the VOC content of the coating using the following formula, provided no chemical reaction occurs during the formulation process:

- (a) “Pounds per gallon of coating (P)” means the VOC content of the coating formulation, as applied, used on a coating line or operation in units of pounds (lb) of VOC per gallon (gal) of coating or kilograms (kg) of VOC per liter (l) of coating, minus water and exempt VOC compounds;
- (b) “n” means the number of different coatings or diluents, as applied, used in the coating formulation;
- (c) “i” means the subscript denoting an individual coating or diluent;
- (d) “V_i” means the volume of the coating or diluent i, as applied, used in the coating formulation in units of gallons or liters, minus water and exempt VOC compounds;
- (e) “C_i” means the VOC content of the coating or diluent i, as applied, used in the coating formulation in units of lb of VOC/gal of coating, or kg of VOC/l of coating less water and exempt VOC compounds, as determined from the Method 24 or 24A analysis and the calculation procedures in Section 2.2 of EPA-340/1-86-016, A Guideline for Surface Coating Calculations, July, 1986;
- (f) “V_T” means the total volume of the coating formulation, as applied, in units of gallons or liters, minus water and exempt VOC compounds; and
- (g) P shall be equal to the sum of the products of V_i and C_i for coatings or diluents one through n divided by V_T, as in the following equation:

$$P = \frac{\sum_{i=1}^n (V_i C_i)}{V_T}$$

Env-A 804.06 Calculation of Daily-Weighted Average for a Coating Line Using Multiple Coatings. The owner or operator of a coating source subject to a pounds VOC/gallon coating standard as specified in Env-A 1200, using multiple coatings on a single line, may choose to demonstrate compliance with such standard by calculating a daily-weighted average as follows:

- (a) “Pounds per gallon of coating, daily-weighted (PW)” means the daily-weighted average VOC content of the coatings, as applied, used on a coating line or operation in units of lb VOC per gal of coating or kg VOC per l of coating, minus water and exempt VOC compounds;
- (b) “n” means the number of different coatings or diluents, as applied, used each day on a coating line or operation;

- (c) “i” means the subscript denoting an individual coating or diluent;
- (d) “V_i” means the volume of the coating or diluent i, as applied, used each day on a coating line or operation in units of gal or l, minus water and exempt VOC compounds;
- (e) “C_i” means the VOC content of the coating or diluent i, as applied, used each day on a coating line or operation in units of lb VOC/gal of coating, or kg VOC/l of coating less water and exempt VOC compounds, as determined from the Method 24 or 24A analysis and the calculation procedures in section 2.2 of EPA-340/1-86-016, A Guideline for Surface Coating Calculations, July, 1986;
- (f) “V_T” means the total volume of all coatings, as applied, used each day on a coating line or operation in units of gal or l, minus water and exempt VOC compounds; and
- (g) The PW shall be equal to the sum of the products of V_i and C_i for coatings or diluents one through n, divided by V_T, as in the following equation:

$$P_W = \frac{\sum_{i=1}^n (V_i C_i)}{V_T}$$

Env-A 804.07 Calculation of Emission Standard for Sources Complying with VOC RACT Using Either a Bubble or Add-On Controls. For a coating source that uses add-on control equipment or a bubble to achieve compliance with Env-A 1200, the overall emission standard shall be calculated as follows:

- (a) “Pounds VOC per gallon of solids, emission standard (S)” means the VOC emission standard in terms of lb VOC/gal of coating solids, or kg VOC/l of coating solids, as applied;
- (b) “Pounds VOC per gallon of coating, emission standard (Ec)” means the VOC emission standard in terms of lb VOC/gal of coating, or kg VOC/l of coating, as applied, minus water and exempt compounds, obtained from the appropriate section of Env-A 1200;
- (c) “d_A” means the actual mass density of the VOC in the applied surface coating formulation in terms of lb/gal or kg/l. For those stationary sources that have multiple coating lines feeding the add-on control equipment, d_A means the weighted average actual mass density of the VOC in the applied surface coatings in terms of lb/gal or kg/l; and
- (d) S shall be equal to Ec divided by the difference between one and the quotient of Ec and d_A, as in the following equation:

$$S = \frac{E_c}{1 - \left(\frac{E_c}{d_A}\right)}$$

Env-A 804.08 Calculation of Daily-Weighted Average for Coating Lines With Bubble or Control Device. The owner or operator of a coating source that complies with Env-A 1200, by using add-on control equipment or a bubble and which is subject to a pounds VOC/gallon of coating solids standard shall demonstrate compliance with such standard by calculating a daily-weighted average in pounds VOC/gallon solids as follows:

- (a) “Pounds VOC per gallon of solids, daily-weighted (S_w)” means the daily weighted average VOC content, as applied, of the coatings used on multiple coating lines or operation in units of lb VOC/gal of coating solids or kg/l of coating solids;
- (b) “n” means the number of different coatings and dilution solvents, as applied, used in a day on a coating line or operation;
- (c) “i” means the subscript denoting an individual coating or dilution solvent;
- (d) “ V_i ” means the volume of the coating or dilution solvent i as applied, used in a day on a coating line or operation in units of gal or l;
- (e) “ W_i ” means the weight fraction of VOC of the coating or dilution solvent i as applied, minus water and exempt VOC compounds, used in a day on a coating line or operation in units of lb VOC/lb coating, or kg VOC/kg coating as determined from Method 24 or 24A analysis;
- (f) “ D_i ” means the density of the coating or dilution solvent i in units of lbs/gal coating or kg/l coating as determined from Method 24 or 24A analysis;
- (g) “ F_i ” means the volume fraction solids content of each coating i, as applied, used in a day on a coating line, in units of gal solids/gal coating or liter (l) solids/l coating as determined by calculation using the formulation; and
- (h) “ S_w ” shall be equal to the sum of the products of V_i , W_i , and D_i for coatings or dilution solvents one through n, divided by the sum of the products of V_i and F_i for coatings or dilution solvents one through n, as in the following equation:

$$S_w = \frac{\sum_{i=1}^n V_i(W_i)D_i}{\sum_{i=1}^n V_iF_i}$$

Env-A 804.09 Calculation of Required Overall Emission Reduction Efficiency of a Control System. The owner or operator of a coating source using add-on control equipment or a bubble to achieve compliance with Env-A 1200, shall calculate the required emission reduction efficiency of the control system as follows:

(a) “RE” means the required overall emission reduction efficiency of the control system for the day, expressed as a percentage;

(b) “M” means the maximum VOC content of the coatings, as applied, used each day on the subject coating line or operation, in units of lbs of VOC/gal of coating solids, as determined by the applicable test methods and procedures specified in this section and the calculation examples presented in section 2 of EPA Document Number EPA-340/1-86-016, A Guideline for Surface Coating Calculations, July, 1986;

(c) “S” means the VOC emission standard in terms of lb/gal, or kg/l, of coating solids as calculated in accordance with Env-A 804.07; and

(d) RE shall be equal to the difference between M and S, multiplied by 100 and divided by M, as in the following equation:

$$RE = \frac{(M - S)}{(M)} \times 100$$

Env-A 804.10 Calculation of Actual Overall Emission Reduction Efficiency of a Control System. The owner or operator of a coating source using add-on control equipment to achieve compliance with Env-A 1200, shall determine the measured overall emission reduction efficiency of the control system as follows:

(a) “E_{MEAS}” means the measured overall emission reduction efficiency of the control system for the day, expressed as a percentage;

(b) “CE” means the most recent capture efficiency test results, in percentage of VOC captured, as determined in accordance with Env-A 805;

(c) “RE” means the measured VOC removal efficiency of the control device, in percentage of VOC removed;

(d) The E_{MEAS} shall be equal to the product of CE divided by 100, RE divided by 100, and 100, as in the following equation:

$$E_{MEAS} = \frac{(CE)}{100} \times \frac{(RE)}{100} \times 100$$

Env-A 804.11 Compliance Determination of a Control System. For a coating source using add-on control equipment, the control system shall be determined to be in compliance with its overall emission standard when, on a daily basis, E_{MEAS} is greater than or equal to the RE, as those terms are defined in Env-A 804.10.

Env-A 804.12 Initial Compliance Stack Testing for VOCs.

(a) The owner or operator of a stationary source that achieves compliance with Env-A 1200, through the operation of an add-on control system shall perform initial compliance

stack testing in accordance with Env-A 802 and Env-A 804.14 to determine the control efficiency of the add-on control system.

(b) Compliance stack testing required by this section shall be performed within 180 days of the date that the source becomes subject to Env-A 1200 or within 60 days of startup of the control device, whichever is later.

Env-A 804.13 Periodic Compliance Stack Testing for VOCs.

(a) The owner or operator of a stationary source that achieves compliance with Env-A 1200 through the operation of add-on control equipment shall perform periodic stack testing to demonstrate compliance by performing one of the following:

(1) Within 5 years of the date of the initial stack test required by Env-A 804.12 and at least once every 5 years thereafter, or within 20 calendar quarters, a compliance stack test to demonstrate compliance with the VOC emission limit, or that the control device is at or above the minimum required destruction or removal efficiency, as stipulated in the permit; or

(2) Within 5 years of the date of the initial stack test required by Env-A 804.12 and at least once every 4 calendar quarters thereafter, a performance verification, in accordance with the conditions of the source's permit, that the emissions of VOCs have not increased or the efficiency of the control device has not deteriorated such that the source no longer complies with the VOC emissions limit or destruction efficiency.

(b) If the performance verification in (a)(2), above, indicates that VOCs have increased or that the control device efficiency has deteriorated since the last compliance test such that the source is not able to verify its compliance with the VOC emissions limit or destruction efficiency, the owner or operator shall conduct a compliance stack test within 60 days of the performance verification.

Env-A 804.14 Test Methods for Compliance Stack Testing for VOCs.

(a) The owner or operator of a stationary source performing compliance stack testing in order to demonstrate compliance with Env-A 1200 shall use the following test methods, as applicable:

(1) Methods 1-4 in 40 CFR 60, Appendix A, for determining flow rates; and

(2) Methods 18, 25, 25A or 25B in 40 CFR 60, Appendix A, for determining gaseous organic concentrations.

(b) For purposes of this section, parts per million by volume (ppmv) shall be expressed:

(1) In terms of the calibration gas used during the stack test or as the actual constituent measured; and

(2) On the same basis as the outlet concentration.

(c) Measurements made pursuant to this section may be on a wet or dry basis but shall be consistent with the basis of all concentration and volumetric flow values used in the formula in (d), below.

(d) The removal efficiency of the add-on control system shall be determined, as applicable, by simultaneously measuring the inlet and outlet gas-phase VOC concentrations and gas volumetric flow rates using the testing methods specified above and the following formula:

(1) "RE" means the VOC removal efficiency of the control device in percentage;

(2) "Qi" means the volumetric flow rate of the inlet gas flowing into the control device, in standard cubic feet per hour (SCFH);

(3) "Ci" means the concentration of VOC flowing into the control device, in ppmv;

(4) "n" means the number of input gaseous streams feeding the control device;

(5) "Qo" means the volumetric flow rate of the outlet gas exiting the control device, in SCFH;

(6) "Co" means the concentration of VOC exiting the control device, in ppmv;

(7) "m" means the number of emission vents leaving the control device; and

(8) RE shall be equal to the sum of the products of Qi and Ci for input gaseous streams one through n, minus the sum of the products of Qo and Co for emission vents one through m, divided by the sum of the products of Qi and Ci for input gaseous streams one through n, the entire quantity multiplied by 100 to convert to percentage, as in the following equation:

$$RE = \frac{\sum_{i=1}^n QiCi - \sum_{o=1}^m QoCo}{\sum_{i=1}^n QiCi} \times 100$$

(e) The owner or operator of a stationary source that achieves compliance with Env-A 1200 through the operation of an add-on control system shall also perform capture efficiency testing as applicable in accordance with Env-A 805.

Env-A 804.15 Mass Balance Alternative to Compliance Stack Testing for VOC. For a stationary source using a control device designed to collect and recover VOC, such as a

carbon adsorber, the mass balance alternative test as specified in Env-A 805.06 for the combined capture efficiency and control efficiency may be performed in place of compliance stack testing specified in Env-A 804.12.

Env-A 804.16 Rotogravure and Flexographic Printing and Graphics.

(a) For rotogravure and flexographic printing and graphics operations compliance shall be determined using the test methods specified in either (b) or (c), below.

(b) For an operation using low solvent inks to achieve compliance with Env-A 1200, the applicable test method in Env-A 804.04 shall apply as follows:

(1) Compliance shall be determined for each ink or each ink blend on an instantaneous basis; and

(2) For ink blends containing multiple constituents, the average percentage VOC shall be determined as follows:

a. “VA” means the average volume percentage VOC content in the ink formulation used minus water and exempt VOC compounds;

b. “n” means the number of different constituents, used in the ink formulation;

c. “Vi” means the volume percentage VOC content in the ink constituent “i” minus water and exempt VOC compounds;

d. “Fi” means the volume fraction of constituent “i” used in the ink formulation; and

e. The VA shall be equal to the sum of the products of Fi and Vi for ink constituents one through n, as in the following equation:

$$V_A = \sum_{i=1}^n (F_i)(V_i)$$

(c) For an operation using a control system to achieve compliance with Env-A 1200, the following test methods and procedures, as applicable, shall apply:

(1) Env-A 802, Compliance Stack Testing for Stationary Sources;

(2) Env-A 804.12 through Env-A 804.14, Compliance Stack Testing for VOCs;

(3) Env-A 804.15, Mass Balance Alternative to Compliance Stack Testing for VOC; and

(4) Env-A 805, Capture Efficiency.

Env-A 804.17 Testing Fountain Solutions in Offset Lithography. To determine compliance with Env-A 1216.03(c), the owner or operator of a business that operates an offset lithographic printing press shall use the methods prescribed below:

(a) The VOC content of the fountain solution, which is the mixture used to maintain the quality of the printing plate, shall be determined by one of the following procedures:

- (1) The applicable test method specified in Env-A 804.04;
- (2) Measurement of an in-use sample of fountain solution with a hydrometer or refractometer that has been standardized using the procedures of (3)c.1. or (3)c.2., below, which demonstrates that the value so obtained is not more than 10% greater than the value determined in accordance with the procedures specified in (a)(1), above;
- (3) Monitoring with a refractometer, in accordance with the following procedure:
 - a. The refractometer shall be corrected for temperature at least once per 8-hour shift or once per batch, whichever is longer;
 - b. The refractometer shall have a visual, analog, or digital readout with an accuracy of +0.5%; and
 - c. The refractometer shall be calibrated by one of the following methods:
 1. Using a standard solution to calibrate the refractometer for the type of alcohol used in the fountain solution; or
 2. Standardizing the refractometer against measurements and calculations performed in accordance with Env-A 804.04;
- (4) Monitoring with a hydrometer, according to the following procedure:
 - a. Temperature correction shall be achieved as follows:
 1. The hydrometer shall be equipped with temperature correction; or
 2. Readings shall be adjusted for temperature;
 - b. Hydrometer monitoring shall be performed at least once per 8-hour shift or once per batch, whichever is longer;
 - c. The hydrometer shall have a visual, analog, or digital readout with an accuracy of +0.5%; and
 - d. The hydrometer shall be calibrated by one of the following methods:

1. Using a standard solution to calibrate the hydrometer for the type of alcohol used in the fountain; or
 2. Standardizing the hydrometer against measurements or calculations performed in accordance with Env-A 804.04; or
- (5) Where a refractometer or hydrometer cannot be used to monitor the type of VOCs in the fountain solution, monitoring with a conductivity meter in accordance with the following:
- a. The reading of the conductivity meter shall be referenced to the conductivity of the incoming water; and
 - b. The conductivity meter shall be calibrated by one of the following methods:
 1. Using a standard solution to calibrate the conductivity meter for the type of alcohol used in the fountain; or
 2. Standardizing the conductivity meter against measurements or calculations performed in accordance with Env-A 804.04; and

(b) Compliance with the fountain solution temperature requirements imposed by the options of Env-A 1216.03(c)(2) for web-fed heatset operations, where heat is used to set the printing ink on a continuous roll of paper, or Env-A 1216.03(d)(2) for sheet-fed operations, shall be demonstrated by:

- (1) Using a thermometer or other temperature detection device capable of reading to within ± 0.5 degrees F; and
- (2) Reading and recording the output of the temperature instrument at least once per operating day to verify proper operation of the refrigeration system.

Env-A 804.18 Testing Cleaning Solutions in Offset Lithography. To determine compliance with Env-A 1216.02(a), the owner or operator of a business that operates an offset lithographic printing press shall use the methods prescribed below:

- (a) The VOC content of the cleaning solution shall be determined by the applicable test methods specified in Env-A 804.04;
- (b) The VOC composite partial vapor pressure of the cleaning solution pursuant to the option specified in Env-A 1216.02(a)(2) shall be determined using one of the following procedures:
 - (1) An alternate analytical method approved by the department in accordance with Env-A 809; or

(2) A calculation which combines on a volumetric basis the analytical VOC vapor pressure data for the constituents of the cleaning solution based on records of the proportions in which they are mixed to make the press-ready cleaning solution; and

(c) An owner or operator of a business that operates an offset lithographic printing press choosing to demonstrate compliance with the VOC limitations specified in Env-A 1216.02(a)(1) and equipped with automatic devices that mix cleaning solution at the point of application shall employ flow meters or fixed-volume spray systems to monitor water and cleaning solution application rates.

Env-A 804.19 Determining Control Efficiencies in Offset Lithography. Compliance with the control efficiency requirements for an add-on control device used to reduce VOC emissions from the dryer exhaust of heatset inks used in offset lithography, pursuant to Env-A 1216.03(a), shall be demonstrated using the test methods and procedures described in the following rules, as applicable:

- (a) Env-A 802, Compliance Stack Testing for Stationary Sources;
- (b) Env-A 804.12 through Env-A 804.14, Compliance Stack Testing for VOCs;
- (c) Env-A 804.13 Mass Balance Alternative to Compliance Stack Testing for VOC; and
- (d) Env-A 805, Capture Efficiency.

Env-A 804.20 Fixed-roof VOC Storage Tanks. When performing a visual inspection of the internal floating roof and its closure seal(s) as required by Env-A 1200, the owner or operator of a fixed-roof VOC storage tank shall inspect for all of the following:

- (a) The cover shall be uniformly floating on or above the liquid;
- (b) The surface of the cover shall have no visible defects;
- (c) The cover shall have no accumulated liquid; and
- (d) The seal shall be intact and uniformly in place around the circumference of the cover between the cover and tank wall.

Env-A 804.21 External Floating Roof VOC Storage Tanks. The owner or operator of a VOC storage tank with an external floating roof shall perform the following actions:

- (a) A visual inspection of the secondary seal gap during semi-annual inspections; and
- (b) When the roof is equipped with a vapor-mounted primary seal, annual measurement of the secondary seal gap in accordance with the following procedure:

- (1) The length and width of all gaps around the entire circumference of the secondary seal shall be measured in each place where a 0.32 cm or 0.125 in. uniform diameter probe passes freely, without forcing or binding against the seal, between the seal and tank wall; and
- (2) The sum of the areas of the individual gaps shall be calculated.

Env-A 804.22 Bulk Gasoline Loading Terminals. The owner or operator of a bulk gasoline loading terminal shall use the following test methods:

- (a) The test methods and procedures specified for vapor control units in 40 CFR 60.503; and
- (b) Method 27 as described in 40 CFR 60, Appendix A, for vapor tightness of gasoline delivery.

Env-A 804.23 Solvent Metal Cold Cleaners, Open Top Degreasing and Conveyorized Degreasing. The owner or operator of a solvent metal cold cleaner, open top vapor degreasing operation, or conveyorized degreasing operation shall use the following test methods:

- (a) Visual inspection for compliance with equipment specifications and operating procedures; and
- (b) When compliance is by add-on control systems:
 - (1) Methods 1-4 in 40 CFR 60, Appendix A, for determining flow rates;
 - (2) Methods 18, 25, 25A or 25B in 40 CFR 60, Appendix A, for determining gaseous organic concentrations; and
 - (3) ASTM D323-08 for measuring solvent true vapor pressure.

PART Env-A 805 CAPTURE EFFICIENCY (CE)

Env-A 805.01 Scope. The capture efficiency (CE) testing requirements of this section shall apply to all VOC-emitting processes that are subject to the provisions of Env-A 1206 through Env-A 1222, where it has been determined by the department that CE testing is required to demonstrate compliance with those provisions.

Env-A 805.02 Definitions. For the purposes of this part, the following definitions shall apply:

- (a) “Average face velocity” means the velocity at an emissions collection point as

calculated by dividing the average volumetric flow rate by the total of the face of the collection;

- (b) “Building enclosure” (BE) means a structure that:
 - (1) Contains a VOC-emitting process; and
 - (2) Meets the specifications given in 40 CFR 51, Appendix M, Method 204;
- (c) “Capture” means the containment or recovery of emissions from a process for direction into an exhaust duct which leads to a stack or a control device;
- (d) “Capture efficiency” (CE) means the weight per unit of time of VOC entering a capture system and delivered to a control device divided by the weight per unit time of total VOC emitted by an emission source of VOC expressed as a percentage;
- (e) “Capture system” means any other equipment that contains, collects and/or transports an air pollutant to a control device, such as hoods, ducts, fans, booths, ovens, and dryers;
- (f) “Control device” means equipment used to reduce, by destruction or removal, the amount of air pollutant(s) in an air stream prior to discharge into the ambient air, such as an incinerator or carbon adsorber;
- (g) “Control system” means a combination of one or more capture system(s) and control device(s);
- (h) “Destruction or removal efficiency” means the efficiency, expressed as a percentage, of a control device in destroying or removing contaminants calculated as one minus the ratio of the amount of VOC exiting the control device to the amount of VOC entering the control device;
- (i) “Gas/gas method” means a method for determining capture efficiency which relies only on gas phase measurements, either by:
 - (1) Construction of a temporary total enclosure (TTE) to assure all would-be fugitive emissions are measured; or
 - (2) Use of a building or room that houses the emission source as a BE;
- (j) “Hood” means a partial enclosure or canopy for capturing and exhausting, by means of a draft, the organic vapors or other fumes rising from a coating process or other source;
- (k) “Liquid/gas method” means a method for determining capture efficiency which requires both gas phase and liquid phase measurements and analysis, either by:

- (1) Construction of a temporary total enclosure (TTE); or
 - (2) Use of a building or room that houses the emission source as a BE;
- (l) “Method 204” means the criteria for and verification of a permanent or temporary total enclosure as specified in 40 CFR 51, Appendix M;
 - (m) “Method 204A” means the procedure for determining the VOC content in a liquid input stream as specified in 40 CFR 51, Appendix M;
 - (n) “Method 204B” means the procedure for determining the VOC emissions in a captured stream as specified in 40 CFR 51, Appendix M;
 - (o) “Method 204C” means the procedure for determining the VOC emissions in a captured stream as specified in 40 CFR 51, Appendix M;
 - (p) “Method 204D” means the procedure for determining the VOC emissions in a fugitive stream from a temporary total enclosure as specified in 40 CFR 51, Appendix M;
 - (q) “Method 204E” means the procedure for determining the VOC emissions in a fugitive stream from a building enclosure as specified in 40 CFR 51, Appendix M;
 - (r) “Method 204F” means the procedure for determining the VOC content in a liquid input stream, such as the distillation approach, as specified in 40 CFR 51, Appendix M;
 - (s) “Overall control” means, for a solvent recovery system, the ratio of the total recovered solvent VOC in a control device to the sum of the liquid VOC input to all process lines venting to the control system;
 - (t) “Overall emission reduction efficiency” means the weight per unit time of VOC removed or destroyed by a control device divided by the weight per unit time of VOC emitted by an emission source, expressed as a percentage, and is the product of the capture efficiency and the control equipment destruction or removal efficiency;
 - (u) “Permanent total enclosure” (PTE) means a structure that:
 - (1) Is permanently installed to completely surround a source of VOC emissions such that all emissions are captured and contained for discharge to a control device; and
 - (2) Meets the specifications given in Method 204; and
 - (v) “Temporary total enclosure” (TTE) means a structure that:

- (1) Is installed to completely surround a source of VOC emissions such that all emissions that are not directed through the control device are captured by the enclosure and contained for discharge through ducts that allow for the accurate measurement of the uncaptured VOC emissions; and
- (2) Is installed solely for the purpose of measuring uncaptured VOC emissions;
- (3) Is removed after testing is completed; and
- (4) Meets the specifications given in Method 204.

Env-A 805.03 Requirements for CE Testing.

- (a) Detailed requirements for CE testing shall be as specified in this section and in the Guidelines for Determining Capture Efficiency (GFDCE), Candace Sorrell, Source Characterization Group A (MD-19), Emission Monitoring and Analysis Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, January 9, 1995.
- (b) An owner or operator of a source that uses a control device in order to comply with Env-A 1200 shall perform CE testing whenever compliance stack testing is required to be performed in accordance with Env-A 804.
- (c) An owner or operator required to perform CE tests shall:
 - (1) Perform one of the CE test procedures specified in Env-A 805.04;
 - (2) Use one of the alternative CE test procedures specified in Env-A 805.05; or
 - (3) Use an alternative CE test procedure in accordance with Env-A 809.

Env-A 805.04 CE Procedures.

- (a) For the gas/gas method using a TTE, as described in Method 204, the CE shall be determined by the following procedure:
 - (1) "CE" means the capture efficiency calculated as a decimal fraction;
 - (2) "G" means the mass of VOC captured and delivered using TTE, obtained using Method 204C, or if a single flame ionization analyzer (FIA) device cannot be used simultaneously for Method 204D and Method 204C, Method 204B may be used for the determination of G;
 - (3) "F" means the mass of fugitive VOC that escapes from TTE, obtained using Method 204D; and

- (4) CE shall be obtained by dividing G by the sum of G and F, as in the following equation:

$$CE = G/(G + F)$$

- (b) For the liquid/gas method using TTE, as described in Method 204, the CE shall be determined by the following procedure:
- (1) "CE" means the capture efficiency calculated as a decimal fraction;
 - (2) "L" means the mass of liquid VOC input to process, obtained using Method 204A or Method 204F;
 - (3) "F" means the mass of fugitive VOC that escapes from a TTE, obtained using Method 204D; and
 - (4) CE shall be obtained by dividing the difference between L and F by L, as in the following equation:

$$CE = (L - F)/L$$

- (c) For the gas/gas method using as the enclosure the BE in which the affected source is located and in which G and F_B, as defined in (c)(2), below, are measured while operating only the affected facility:

- (1) All fans and blowers in the BE shall be operated as they would under normal production; and
- (2) The CE shall be determined as follows:
 - a. "CE" means the capture efficiency calculated as a decimal fraction;
 - b. "G" means the mass of VOC captured and delivered to a control device, obtained using Method 204C, or if a single FIA device cannot be used simultaneously for Method 204E and Method 204C, Method 204B may be used for the determination of G;
 - c. "F_B" means the mass of fugitive VOC that escapes from the BE, obtained using Method 204E; and
 - d. CE shall be obtained by dividing G by the sum of G and F_B, as in the following equation:

$$CE = G/(G + F_B)$$

- (d) For the liquid/gas method using as the enclosure the BE in which the affected source

is located and in which L and F_B, as defined in (d)(2), below, are measured while operating only the affected facility:

- (1) All fans and blowers in the BE shall be operated as they would under normal production; and
- (2) The CE shall be determined as follows:
 - a. "CE" means the capture efficiency calculated as a decimal fraction;
 - b. "L" means the mass of liquid VOC input to process, obtained using Method 204A or Method 204F;
 - c. "F_B" means the mass of fugitive VOC that escapes from the BE, obtained using Method 204E; and
 - d. The CE shall be obtained by dividing the difference between L and F_B by L, as in the following equation:

$$CE = (L - F_B)/L$$

Env-A 805.05 Alternative CE Procedures for Control Devices Other Than Solvent Recovery Systems.

- (a) If a source installs a PTE that meets EPA specifications as described in Method 204 and which directs all VOC to a control device, the CE shall be assumed to be 100%, and the source shall be exempt from the CE testing requirements described in this part. A source that has installed a PTE shall not be exempt from the compliance stack testing requirements of any control device required under these or any other rules.
- (b) A source choosing to demonstrate that it meets the criteria for a PTE shall submit the following to the department:
 - (1) Documentation showing that all Method 204 criteria for a PTE were met during the testing for control efficiency of the add-on control device; or
 - (2) For any time period other than during testing of the add-on control device for control efficiency, documentation which demonstrates that the operation of the control system occurred under the same conditions experienced during the control device compliance stack test.
- (c) The data quality objective (DQO) approach as specified in the GFDCE, Section 3.1, may be used as an alternative method for determining CE using the Method 204 through Method 204F test series, in conjunction with the additional criteria specified in Section 3.3 of the GFDCE and the reporting and recordkeeping requirements of Section 3.4 and 3.5 of the GFDCE.

- (d) The lower confidence limit (LCL) approach as specified in the GFDCE, Section 3.2, may be used as an alternative method for determining CE, using the following:
- (1) The Method 204 through Method 204F test series;
 - (2) Additional criteria specified in Section 3.3 of the GFDCE; and
 - (3) The reporting and recordkeeping requirements of Section 3.4 and 3.5 of the GFDCE.
- (e) Multiple line CE testing may be used if the requirements in the GFDCE, Section 4.0, are followed.

Env-A 805.06 Alternate CE Procedures for Solvent Recovery Systems. For a source that uses a control device, such as a carbon adsorber, designed to collect and recover VOC in accordance with the criteria in Env-A 805.07, the following alternative to CE testing may be used:

- (a) The overall control efficiency of the system shall be determined over a minimum of a 24-hour period;
- (b) The testing procedures shall be as described in 40 CFR 60.433, with the following additional restrictions for VOC sources subject to Env-A 1204 or successor rules in Env-A 1200:
 - (1) The owner or operator of the source shall compare solvent usage to solvent recovery on a 24-hour basis, rather than a 30-day weighted average as specified in 40 CFR 60.433; or
 - (2) If the overall emission reduction efficiency required by the applicable rule is met, as determined by the initial 24-hour test, the owner or operator of the source may compare solvent usage to solvent recovery over an alternative time period subject to the following:
 - a. The owner or operator seeking approval of an alternative time period shall submit the following information in writing to the department:
 1. The identity and description of the facility, including a description of the process and the solvent recovery control device;
 2. The proposed alternative time period, not to exceed 30 days; and
 3. Technical data and information demonstrating that the control device designed to collect and recover VOC will be operated in a manner consistent with the manner in which it was operated during the initial 24-

hour period of the test, and that the results produced over the proposed time period are no less precise and accurate than those produced during the initial 24-hour time period;

- b. The department shall review the information submitted pursuant to (b)(2)a., above;
 - c. The department shall approve the proposed alternative time period if all of the information required in (b)(2)a., above, has been submitted to the department and the information demonstrates that:
 - 1. The control device shall be operated in a manner consistent with the manner in which it was operated during the initial 24-hour time period of the test; and
 - 2. The results produced over the proposed time period shall be no less precise and accurate than those produced during the initial 24-hour time period; and
 - d. The department shall notify the applicant and the EPA of the decision within 60 days of receipt of the required information;
- (c) Each demonstration as specified in (b)(1), above, relating solvent usage with solvent recovery, including the initial 24-hour time period, shall be performed by the source within 72 hours of the end of each established time period; and
- (d) Any recovery rates calculated using the procedure specified in this section, which result in a lower rate than that needed to comply with the applicable rule, shall be reported to the department within 7 calendar days.

Env-A 805.07 Solvent Recovery System Requirements. An owner or operator of a source using a solvent recovery system may use the alternate CE testing procedure described in Env-A 805.06 if the solvent recovery system meets one of the following criteria:

- (a) The solvent recovery system is dedicated to a single process line, for example, one process line venting to a carbon adsorber system; or
- (b) If the solvent recovery system controls multiple process lines, the owner or operator demonstrates by submitting written documentation to the department that the overall control meets or exceeds the most stringent standards applicable for each process line venting to the control system.

Env-A 805.08 Recordkeeping and Reporting. Recordkeeping and reporting requirements for CE testing shall be as follows:

- (a) The owner or operator of a source required to perform CE tests shall maintain a copy of the CE test results at the source;
- (b) The owner or operator shall notify the department at least 30 days prior to performing any CE or control efficiency tests;
- (c) The owner or operator shall report all results of CE testing to the department within 60 days of the test date;
- (d) For any source using a PTE, the owner or operator shall demonstrate by submitting written documentation to the department that the enclosure meets the requirements specified in Method 204 for a PTE during any testing of the control device;
- (e) For any source using a TTE, the owner or operator shall demonstrate by submitting written documentation to the department that:
 - (1) Its TTE meets the requirements given in Method 204 for a TTE during testing of their control device; and
 - (2) The quality assurance criteria for a TTE have been achieved; and
- (f) The owner or operator shall notify the department of any changes made to the capture or control equipment, except for any reductions in the air flow at a collection point that occurs because the emission source that the collection point is serving is not being used.

Env-A 805.09 Changes to the Control System.

- (a) Measurements of average face velocity shall be done at all collection points whenever any physical changes are made to the control system; and
- (b) Any one of the following shall constitute a change to the capture or control equipment, thereby requiring a new CE test:
 - (1) An increase of more than 10% in the distance between any emission collection point and the emission source that the collection point is serving;
 - (2) A reduction in the average face velocity at any emission point ducted to the control device to a value less than 90% of the value measured and recorded during a previous CE test, except for reductions occurring at a collection point as a result of a shutdown of the emission point that said collection point is serving; or
 - (3) A change in the physical structure or operation which causes an increase or decrease in the amount of a specific air pollutant emitted from a device or which results in the emission of any additional air pollutant, and such change is

determined by the department to have a significant impact on air quality as determined by modeling conducted in accordance with 40 CFR 51, Appendix W.

PART Env-A 806 SULFUR CONTENT TESTING OF FUELS

Env-A 806.01 Purpose. The purpose of this part is to specify testing procedures for sulfur content in fuels.

Env-A 806.02 Test Methods for Liquid Fuels.

- (a) For the purpose of determining the sulfur content, in percent sulfur by weight, for the liquid fuels listed in the left column of Table 8.1, the owner or operator shall use one of the specified test methods, as described in Table 8.1:

Table 8.1 Test Methods for Liquid Fuels

	ASTM D1552-16	ASTM D2622-16	ASTM D5453-12	ASTM D4294-16	ASTM D3120-08	ASTM D7039-15
Ultra-low sulfur diesel		X	X		X	X
No. 2 Oil	X	X	X	X		
No. 4 Oil	X	X	X	X		
No. 6 Oil	X	X		X		
Off-road Diesel	X	X	X	X		
Crude Oil	X	X		X		
On-road Low Sulfur Diesel		X	X			
Kerosene-1		X				
Kerosene-2		X				
Jet A-1 Aviation Fuel		X	X	X		
Jet B Aviation Fuel		X	X	X		
JP-4 Aviation Fuel		X	X	X		
JP-8 Aviation Fuel	X	X	X	X		
Aviation Gasoline		X	X			
Gasoline		X	X		X	

- (b) For the purpose of determining the sulfur content, in percent sulfur by weight, for blended liquid fuel, the owner or operator shall use one of the following procedures:
 - (1) An analysis of the blended product following the applicable methods specified in (a), above; or
 - (2) An analysis of each blended fuel constituent following the applicable methods specified in (a), above, combined with weight averaging of the constituents.

- (c) If the procedure in (b)(2), above, is used, the owner or operator shall:
- (1) Calibrate all flow meters and instrumentation used in the weight averaging measurement in accordance with the manufacturer's recommended procedures; and
 - (2) Document and maintain on file such calibration and date of calibration.

Env-A 806.03 Test Methods for Gaseous Fuels.

- (a) For the purpose of determining the sulfur content in grains of sulfur per 100 cubic feet of natural gas, the owner or operator shall use one of the following test methods:
- (1) ASTM D 1072-06 (2017);
 - (2) ASTM D 4084-07 (2017);
 - (3) ASTM D 3246-15;
 - (4) ASTM D 5504-12; or
 - (5) ASTM D 6228-10.
- (b) For the purpose of determining the sulfur content in grains of sulfur per 100 cubic feet of LP gas, the owner or operator shall use one of the following test methods:
- (1) ASTM D 2420-13; or
 - (2) ASTM D 2784-11.

Env-A 806.04 Test Methods for Coal. The owner or operator shall use a test method specified by ASTM that is appropriate for coal to determine the sulfur content of coal in pounds of sulfur per million BTU gross heat content and the mercury content of the coal in parts per million by weight on a dry basis.

Env-A 806.05 Recordkeeping Requirements.

- (a) Subject to (b), below, for a stationary source combusting liquid fuel or coal, the owner or operator shall maintain the following sulfur analysis records:
- (1) Records showing the maximum weight percentage sulfur and quantity of each fuel delivery shipment received; and
 - (2) Records showing either:

- a. The analytical method used and the specific fuel analysis results of the shipment or consignment from which the shipment came; or
- b. Delivery records sufficient to allow for traceability of the analytical results corresponding to each shipment received by the stationary source, showing:
 1. The date of delivery;
 2. The quantity of delivery;
 3. The type of fuel;
 4. The maximum weight percent sulfur; and
 5. The name, address, and telephone number of the company making the delivery.

(b) For a stationary source purchasing any liquid fuel listed in Env-A 1603.01 other than No. 5 oil, No. 6 oil, used oil, or crude oil, the owner or operator shall maintain either the records required by (a), above, or a written statement from the fuel supplier that the sulfur content of the fuel as delivered does not exceed state or federal standards for that fuel.

(c) In an investigation or for an inspection by the department, the owner or operator shall provide copies of the documents maintained pursuant to (a) or (b), above, to the department.

PART Env-A 807 TESTING FOR OPACITY OF EMISSIONS

Env-A 807.01 Definition. For the purpose of this part, “Certified opacity continuous emission monitoring system” means an opacity continuous emission monitoring (CEM) system that meets all of the requirements of:

- (a) 40 CFR 60, Appendix B, Performance Specification 1 – Specifications and Test Procedures for Opacity Monitoring Systems in Stationary Sources;
- (b) ASTM D 6216-12, Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications;
- (c) Env-A 808; and
- (d) 40 CFR 60, Appendix F, Procedure 3, Quality Assurance Requirements for Opacity Monitoring Systems at Stationary Sources.

Env-A 807.02 Testing for Opacity from Stationary Sources. The owner or operator shall conduct opacity measurements for a stationary source by using either of the following:

- (a) 40 CFR 60, Appendix A, Method 9 – Visual Determination of the Opacity of Emissions from Stationary Sources; or
- (b) A certified opacity CEM system installed on the stack for which the opacity is being measured.

Env-A 807.03 Determination of Opacity of Fugitive Emissions. The owner or operator shall conduct measurements of the amount of time that any visible fugitive emissions occur during an observation period by following 40 CFR 60, Appendix A, Method 22 – Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares.

PART Env-A 808 CONTINUOUS EMISSION MONITORING

Env-A 808.01 Definitions. For the purposes of this part, the following definitions shall apply:

- (a) “Calendar hour” means any 60-minute period commencing on the hour;
- (b) “Facility operating hour” means, for purposes of calculating data availability pursuant to Env-A 808.12, a minimum of 42 minutes of facility operation during a calendar hour;
- (c) “Facility operation” means one of the following:
 - (1) For a device which combusts fuel to generate electricity, steam, or heat, "or to incinerate municipal solid waste, that is required by this part to have a continuous emission monitoring (CEM) system installed, a time period during which any fuel is being combusted in the device; or
 - (2) For any other facility that is required by this part to have a CEM system installed, a time period during which any material is being processed which contributes to the emissions monitored by the CEM system;
- (d) “Gaseous excess emission” means any measurement made by a gaseous CEM system as defined in (e), below, which exceeds the emission limit specified in any state or federal standard or specified in any permit issued by the department, based on the averaging time specified in the standard;
- (e) "Gaseous CEM system” means a CEM system that measures concentrations of gaseous chemical compounds including, but not limited to, ammonia (NH₃), carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen oxides (NO_x), total reduced sulfur (TRS), hydrogen chloride (HCl), hydrogen fluoride (HF), mercury (Hg), volatile organic

compounds (VOC), and diluent gas, such as oxygen (O₂) or carbon dioxide (CO₂), and includes the following:

- (1) All the components necessary to:
 - a. Extract the gas from a stack, vent, or duct;
 - b. Dilute the sample, where a dilution extractive probe design is being used;
 - c. Transport the sample to the analyzer; and
 - d. Filter or de-water the sample, as applicable by the design of the system; r
 - (2) An analyzer, or analyzers, that can be calibrated with zero gas and higher concentration gas standards in order to measure the concentration of a gaseous chemical compound;
 - (3) The system of valves, gauges, and flow controllers used to control the flow of dilution air, maintain the sampling rate, and introduce calibration and audit gas to the system;
 - (4) If the source is subject to a mass emission rate standard, a stack volumetric flow rate or fuel flow rate monitoring system;
 - (5) The computerized data acquisition system that calculates, averages, and stores the emissions data;
 - (6) Where allowed or required as a monitoring method, sorbent tube monitoring systems; and
 - (7) Other gas concentration measurement methods or technologies with an applicable Performance Specification in 40 CFR 60, Appendix B;
- (f) “Opacity excess emission” means any consecutive 6-minute or 60-minute period, or aggregate 60-minute period of opacity measurement, averaged in accordance with Env-A 808.03 (b), which exceeds any standards for visible emissions specified in Env-A 1900 through Env-A 2900, excluding any exempted periods specified in Env-A 2000;
- (g) “Out of control period” means a period of time during which the emissions data being collected by the CEM system is considered to be invalid, which includes, but is not limited to, the following:
- (1) For a gaseous CEM system:
 - a. The time period beginning with the completion of the daily calibration drift

check where the calibration drift (CD), as calculated pursuant to 40 CFR 60.13(d)(1), has exceeded twice the allowable limit for 5 consecutive days and ending with the CD check following corrective action that results in the CD being within the allowable CD limit;

- b. The time period beginning with the completion of a daily CD check preceding the daily CD check that results in the CD being greater than 4 times the allowable limit and ending with the CD check following corrective action that results in the CD being within the allowable CD limit;
- c. The time period beginning with the completion of a relative accuracy test audit (RATA), cylinder gas audit (CGA), or relative accuracy audit (RAA) as defined in 40 CFR 60, Appendix F, where the CEM system fails the accuracy criteria established and ending with successful completion of the same audit where the CEM system meets the accuracy criteria established after corrective action has occurred; or
- d. Any periods of CEM system operation deemed out-of-control by a federal regulation requiring the installation, operation, and quality assurance of a CEM system, including but not limited to 40 CFR 75 and 40 CFR 63 Subpart UUUUU; and

(2) For an opacity CEM system:

- a. The time period beginning with the completion of the daily calibration drift check where the CD, as calculated pursuant to 40 CFR 60.13(d)(1), exceeds 2% opacity for 5 consecutive days, and ending with the CD check after corrective action has occurred that results in the performance specification drift limits being met;
- b. The time period beginning with the completion of a daily CD check preceding the daily CD check that results in the CD being greater than 5% opacity and ending with the CD check after corrective action has occurred that results in the performance specification drift limits being met;
- c. The time period beginning with the completion of a quarterly opacity audit where the CEM system fails any of the audits required by Env-A 808.11 and ending with successful completion of the same audit after corrective action has occurred; or
- d. The time period beginning with the completion of the zero alignment check required by 40 CFR 60, Appendix F, Procedure 3, section 10.3 where the zero alignment error exceeds 2 percent opacity and ending after corrective action is taken that results in a successful zero alignment check.

(h) “Rolling average” means an arithmetic mean specified by an applicable emission limit and calculated, as follows:

(1) In pounds of pollutant per hour, the sum of the valid hourly values for pounds of the pollutant emitted as determined by the CEM system during the successive facility operating day period, divided by the number of valid hours in the successive facility operating day period, with a new rolling average calculated at the end of each subsequent facility operating day;

(2) In pounds of pollutant per million British thermal units (MMBtu), the sum of the valid hourly values for pounds of the pollutant emitted as determined by the CEM system during the successive facility operating day period, divided by the total MMBtu of heat input of fuel combusted by the device during the valid hours in the successive facility operating day period, with a new rolling average calculated at the end of each subsequent facility operating day;

(3) For purposes of determining a short-term, pound per hour equivalent to a tons per year limit, the sum of all valid hours of emissions in pounds per hour in any consecutive 365-day period divided by 8,760 calendar hours, with a new 365-day rolling average calculated at the end of each subsequent day; or

(4) In accordance with any rolling average established in a permit issued prior to the 2019 effective date of this chapter.

(i) “Valid hour” means a minimum of 42 minutes of gaseous or opacity CEM system emissions readings taken in any calendar hour, during which time the CEM is not in an out of control period as defined in Env-A 808.01(h), and the facility on which the CEM is installed is in operation.

Env-A 808.02 Applicability.

(a) The owner or operator of a stationary source shall install, operate, maintain, and perform quality assurance testing of a gaseous or opacity CEM system meeting all of the requirements specified in this part for a stationary source if any of the following conditions exists:

(1) A source is subject to the New Source Performance Standards, 40 CFR 60, National Emission Standards for Hazardous Air Pollutants, 40 CFR 61 or 40 CFR 63, or Continuous Emission Monitoring, 40 CFR 75, or other applicable federal standard which requires the source to comply with a specified opacity or emission limit and to install a specified CEM system;

(2) The owner or operator of a source chooses to limit its potential to emit by accepting federally enforceable permit conditions that restrict its hours of operation, the type or amount of material combusted, stored, or processed, or its

level of production, and continuous emission monitoring is determined by the department to be necessary to ensure that these permit conditions are not violated;

- (3) A source uses air pollution control equipment in order to maintain compliance with an opacity or emission limit, and continuous emission monitoring is determined by the department to be necessary in order to ensure that this limit is not exceeded and that the control equipment is performing correctly;
 - (4) Documented and repeated violation of any of the applicable opacity or emission limits specified in other provisions of Env-A 300 et seq., has occurred and the installation of a CEM system is feasible;
 - (5) Documented and repeated violation of any of the National Ambient Air Quality Standards (NAAQS) specified in Env-A 300 has occurred, the source is determined by the department to be a major contributor to the violation, and the installation of a CEM system is feasible; or
 - (6) By following the procedures specified in 40 CFR 51, Appendix W, the department determines that a source's emissions have a significant impact on air quality and continuous monitoring of emissions with a CEM system is necessary to ensure that the ambient air quality standards are achieved and maintained.
- (b) A stationary source subject to the continuous emission monitoring requirements specified in 40 CFR 51, Appendix P shall install, calibrate, operate, and maintain a CEM system in accordance with all requirements set forth and referenced therein.
- (c) A facility subject to both this part and the emission monitoring requirements of Env-A 3200 shall comply with:
- (1) The NO_x monitoring requirements as described in Env-A 3200;
 - (2) The minimum percentage data availability requirements as described in Env-A 808.12; and
 - (3) The data reporting requirements as described in Env-A 808.14, as applicable.

Env-A 808.03 Minimum Specifications for CEM Systems. A gaseous or opacity CEM system shall meet the following minimum specifications, as applicable:

- (a) A gaseous CEM system shall average and record the data for each calendar hour;
- (b) An opacity CEM system shall:
 - (1) Average the opacity data to result in consecutive, non-overlapping 6-minute averages; and

(2) If subject to the exemption of Env-A 2002.04(b), total the number of minutes in any 8-hour period where the opacity, as averaged in non-overlapping 6-minute periods, exceeds the applicable opacity standard;

(c) All opacity and gaseous CEM systems shall;

(1) Include a means to display instantaneous values of percent opacity and gaseous emission concentrations; and

(2) Complete a minimum of one cycle of operation, which shall include measuring, analyzing, and data recording for each successive one-minute period for systems measuring gaseous emissions and complete a minimum of at least one measurement of opacity every 10 seconds which shall be averaged and recorded as consecutive, non-overlapping 6-minute averages for opacity monitoring systems unless a longer time period is approved in accordance with Env-A 809;

(d) A stack volumetric flow measuring device shall meet the following requirements:

(1) All differential pressure flow monitors shall have an automatic blow-back purge system installed and, in wet stack conditions, shall have the capability for drainage of the sensing lines; and

(2) The stack flow monitoring system shall have the capability for manual calibration of the transducer while the system is on-line and for a zero check; and

(e) Alternatives to in-stack flow monitoring devices for determination of stack volumetric flow rate shall be used only if the owner or operator provides the department with technical justification that the alternative can meet the same requirements for data availability, data accuracy, and quality assurance as an in-stack device.

Env-A 808.04 CEM Monitoring Plan.

(a) An owner or operator of a source subject to the requirements of this part and required to install, operate, and maintain a gaseous or opacity CEM system shall submit to the department, at least 90 days prior to the installation of the CEM system, a CEM monitoring plan describing the system.

(b) Upon receipt of the CEM monitoring plan or a request submitted pursuant to (f), below, to revise a previously-approved monitoring plan, the department shall:

(1) Review the plan or proposed revision for compliance with all the elements described in this section;

(2) Determine whether the gaseous or opacity CEM system meets all requirements of this part; and

(3) Issue its decision within 30 days, provided that if the plan or proposed revision is not approved, the decision shall specify the reason(s) therefor.

(c) The monitoring plan shall provide the following:

(1) A complete description of the emission monitoring system including, but not limited to:

a. The identity of the CEM system vendor, including the company name, address, and telephone number;

b. The identity of the manufacturer, model number, serial number, measurement method employed, and range of each of the major components or analyzers being used;

c. A description of the sample gas conditioning system;

d. A description and diagram showing the location of the monitoring system, including sampling probes, sample lines, conditioning system, analyzers, any equipment required for measurement of the stack volumetric flow or fuel flow rates, and data acquisition system; and

e. A description of the data acquisition system, including sampling frequency, and data averaging methods;

(2) The mathematical equations used by the data acquisition system, including the value and derivation of any constants, to calculate and report the short-term and long-term emissions in terms of the applicable emission standards;

(3) A complete example of the data reporting format(s) to be used by the owner or operator to meet the reporting requirements for the quarterly emissions report specified in Env-A 808.14 through Env-A 808.18, including an example of any electronic report submitted to the department in order to meet the quarterly reporting requirements;

(4) A description of the analyzer calibration methods, including the frequency of calibration checks and manual calibrations, and path of the calibration gas through the system;

(5) The means used by the data acquisition system of determining and reporting periods of excess emissions, monitor downtime, and out-of-control periods;

(6) A description of the means used to provide for emissions data storage;

(7) For any source subject to Env-A 808.13(a), a description of the method(s) used to determine substitute emissions data as required by Env-A 808.13 during those periods

when the permitted device is generating emissions, but the CEM system is not operating or the data from the CEM system is not valid; and

(8) For any source subject to Env-A 808.13(h), the following information:

a. A description of the calculations used to determine its annual emissions using EPA's Compilation of Air Pollutant Emission Factors, AP-42, as revised or other emission factor determined in accordance with Env-A 616;

b. An explanation of why an emission factor, as specified in a. above, is being used instead of emissions data collected by the gaseous CEM system; and

c. A comparison of the accuracy of the emissions data determined by both methods.

(d) If a proposed monitoring plan does not contain all of the information required by (c), above, or if any of the information is incomplete or inaccurate, the department shall inform the source within 30 days of receipt of the plan that it will not continue its review or issue a decision on the acceptability of the CEM as specified in (b), above, until such time as the source submits a monitoring plan that is complete and accurate.

(e) After the department has approved a CEM monitoring plan, no changes to the plan shall be made unless:

(1) The change is made to document the replacement of a CEM system component pursuant to (g), below;

(2) Prior approval from the department is obtained as specified in (f), below; or

(3) The department determines that:

a. The CEM monitoring plan must be revised to align with changes to state or federal requirements; or

b. Due to changed circumstances or discovery of additional information not previously available, the information submitted pursuant to (c), above, is no longer complete or accurate and the previously-approved CEM monitoring plan must be updated.

(f) To request a change to an approved CEM monitoring plan pursuant to (e)(2), above, the owner or operator shall submit a written request to the department that describes the proposed change and includes any information identified in (c), above, which applies to the proposed change. The department shall process the request as specified in (b) and (d), above.

(g) In the event that the owner or operator replaces a damaged or malfunctioning CEM system component in order to maintain the collection of valid CEM data, and the replacement requires the CEM system to be recertified in accordance with Env-A 808.05(e), (f), or (g), then the owner or operator shall notify the department within one working day of the replacement and shall submit a revision to the CEM monitoring plan within 30 days of the replacement if the replaced component results in a change in the information contained in the previously-approved monitoring plan.

Env-A 808.05 Performance Specification Testing.

(a) The owner or operator of a facility shall conduct performance specification testing for a CEM system in accordance with (b) through (i), below.

(b) Opacity and gaseous CEM systems shall be subject to the applicable performance specification requirements of 40 CFR 60, Appendix B and 40 CFR 75, and additionally for opacity CEM systems, to the zero alignment procedure in 40 CFR 60, Appendix F, Procedure 3, section 10.

(c) Any CEM system that is required to be installed on a new device shall be:

(1) Installed and measuring emissions no later than 60 days after start-up of the device being monitored; and

(2) Certified by the earlier of 60 days of achieving the maximum production rate of the device or 180 days from start-up of the device.

(d) In the absence of any other deadlines required for the installation and certification of the CEM system, any CEM system that is required to be installed on an existing device shall be:

(1) Operating no later than 30 days after installation of the CEM system; and

(2) Certified within 90 days after start-up of the CEM system.

(e) The owner or operator of a certified gaseous or opacity CEM system subject to 40 CFR 75 that makes a replacement, modification, or change to the system shall comply with the recertification procedures specified in 40 CFR 75.20(b).

(f) The owner or operator of a certified gaseous or opacity CEM system that is not subject to 40 CFR 75 shall recertify the system by performing a performance specification test in accordance with the requirements of this chapter whenever the owner or operator:

(1) Replaces a part or component of, or makes a modification to, the CEM system that could affect the ability of the system to:

- a. Accurately measure or record the parameters being monitored; or
 - b. Meet the requirements of 40 CFR 60 Appendix B, or this chapter;
- (2) Makes a change to the flue gas handling system or the unit operation that could change the flow or concentration profile; or
- (3) Changes the location or orientation of the sampling probe or site.
- (g) If any of the changes described in (f), above, occur, the owner or operator shall:
- (1) For a gaseous CEM system, conduct an audit pursuant to 40 CFR 60, Appendix F, Procedure 1, sections 5.1.2 or 5.1.3 within 5 days of the change and a RATA following 40 CFR 60 Appendix B within 90 days of the change; and
 - (2) For an opacity CEM system, perform an audit pursuant to 40 CFR 60, Appendix B, Performance Specification 1, paragraphs 8.1(3)(ii), (iii), and (iv) within 5 days of the change.
- (h) The department shall be notified of the date or dates of any performance specification testing at least 30 days prior to the scheduled dates.
- (i) A written report summarizing the results of the testing and in accordance with Env-A 802.11 shall be submitted to the department within 45 days of the completion of the test.
- (j) The owner or operator of any opacity CEM system subject to either (e) or (f), above, that replaces any opacity CEM system or changes an installed location of a monitor on a stack or duct shall also perform the zero alignment procedure specified in 40 CFR 60, Appendix F, Procedure 3, section 10.3 within 60 days of the replacement or change.

Env-A 808.06 Quality Assurance/Quality Control Plan Requirements.

- (a) The owner or operator of a source required by this chapter to install, operate, and maintain an opacity or gaseous CEM system shall prepare, submit, and maintain a quality assurance/quality control (QA/QC) plan as specified in (b) through (e), below.
- (b) The QA/QC plan shall contain written procedures for implementation of a QA/QC program that meets the criteria specified in 40 CFR 60, Appendix F, Procedure 1, section 3 for each gaseous CEM system and 40 CFR 60, Appendix F, Procedure 3 for each opacity CEM system, and shall include the following:
- (1) A schedule of, and description of, all maintenance activities that are required by the CEM manufacturer or that might have an effect on the operation of the system, including a summary of the results of any performance specification testing that was performed in accordance with Env-A 808.05(e) or (f);

(2) A description of how the audits and testing required by this part will be performed; and

(3) Examples of the reports that will be used to document the audits and tests required by this part.

(c) The owner or operator shall:

(1) File the QA/QC plan with the department no later than 45 days after conducting the performance specification test of the gaseous or opacity CEM system in accordance with Env-A 808.05(c) or (d);

(2) Review the QA/QC plan and all data generated by its implementation at least once each year;

(3) Revise or update the QA/QC plan, as necessary, based on the results of the annual review;

(4) Make the revised QA/QC plan available for on-site review by the department at any time; and

(5) No later than April 15 of each year, either:

a. Submit to the department the revised QA/QC plan and the reasons for each change, and certify in writing that the owner or operator is implementing the revised QA/QC plan; or

b. Certify in writing that no changes have been made to the plan and that the owner or operator will continue to implement the existing QA/QC plan.

(d) The department shall request the owner or operator to revise the QA/QC plan if the results of emission report reviews, inspections, audits, review of the QA/QC plan, or any other information available to the department shows that the plan does not meet the criteria specified in 40 CFR 60, Appendix F, Procedure 1, section 3, or 40 CFR 60, Appendix F, Procedure 3.

(e) If the department requests a revision to the QA/QC plan pursuant to (d), above, the owner or operator shall submit a revised plan within 45 days of the date of the request.

Env-A 808.07 General Audit Requirements for All Gaseous and Opacity CEM Systems.

(a) The owner or operator shall conduct required quarterly audits anytime during each calendar quarter, provided that successive quarterly audits shall occur no more than 4 months apart.

(b) Subject to (e), below, within 30 calendar days following the end of each quarter, the owner or operator shall file with the department a written summary report of the results of all audits required by (a), above, that were performed during that quarter, in accordance with the following:

(1) For gaseous CEM audits, the report format shall conform to that presented in 40 CFR 60, Appendix F, Procedure 1; and

(2) For opacity CEM audits, the report format shall conform to that presented in EPA-450/4-92-010, April 1992, "Technical Assistance Document: Performance Audit Procedures for Opacity Monitors".

(c) The owner or operator shall notify the department:

(1) At least 30 days prior to the performance of a RATA, in accordance with the pre-test procedures described in Env-A 802; and

(2) At least 2 weeks prior to any other planned audit or test procedure required under this part.

(d) The department shall require the rescheduling of a RATA if the staff necessary to observe the audit are not available.

(e) The owner or operator shall file with the department a written summary of the results of the RATA testing in accordance with the reporting requirements in Env-A 802.11 by the earlier of 45 calendar days following the completion of the RATA test or the date established in the section of 40 CFR 60, 40 CFR 75, or other federal rule that requires performance of the RATA.

(f) The owner or operator of a source that has an opacity or gaseous CEM system that is subject to the audit requirements of 40 CFR 63, 40 CFR 75 or other federal rule, and also has a CEM system for monitoring of pollutants not subject to the audit requirements of the applicable federal rule, may perform the audits required by this part at the frequencies, including any grace periods or extensions of the deadlines to allow for periods during which the source is not operating, that are specified in 40 CFR 63, 40 CFR 75, or other federal rule for all of the CEM systems installed at the source.

Env-A 808.08 Audit Requirements for Gaseous CEM Systems.

(a) The owner or operator of a source with a gaseous CEM system subject to the requirements of 40 CFR 75 shall comply with the audit requirements specified in 40 CFR 75, Appendix B.

(b) The owner or operator of a source with a gaseous CEM system monitoring emissions subject to the requirements of 40 CFR 60 shall comply with the audit requirements specified in 40 CFR 60, Appendix F.

(c) The owner or operator of a CEM system that monitors gaseous emissions other than those required to be monitored by (a) and (b), above, shall:

- (1) Request approval of the proposed audit procedures from the department in writing pursuant to Env-A 809;
- (2) Demonstrate that such procedures are consistent with those presented in 40 CFR 60, Appendix B and Appendix F; and
- (3) Upon receiving approval from the department for the proposed audit procedures pursuant to Env-A 809, implement the approved procedures.

Env-A 808.09 Audit Requirements for Stack Flowrate Measurement Systems.

(a) An owner or operator of a stationary source required to use a continuous emissions monitoring system to determine a mass flow emissions rate using a stack volumetric flow monitor, or a fuel flow meter with O₂/CO₂ measurements to calculate heat input or stack flow rate, shall conduct at least once every 4 calendar quarters a minimum 9-run RATA with the relative accuracy calculated in the units of the mass emissions measurement, as specified in 40 CFR 60, Appendices B and F.

(b) The owner or operator of a stationary source subject to (a), above, and using a stack volumetric flow monitor for the mass flow emissions calculation shall in addition to the 9-run RATA, also comply with the audit requirements specified in (d) and (e) below.

(c) The owner or operator of a stationary source subject to (a), above, and using a fuel flow meter for the mass flow emissions calculation, shall, in addition to the 9-run RATA, also perform one of the following audit options:

(1) The quality assurance activities on the fuel flow meter, as applicable, in 40 CFR 75, Appendix D or alternate audit procedures for the fuel flow meter allowed pursuant to 40 CFR 75; or

(2) The audits specified in (d) and (e) below.

(d) In addition to performing the 9-run RATA specified in (a) above, the owner or operator shall conduct in 2 of the calendar quarters in which the RATA is not conducted a 3-run RAA of the stack volumetric flow monitor or fuel flow meter, as follows:

(1) Three velocity traverses shall be conducted following Methods 1 and 2 of 40 CFR 60, Appendix A;

(2) The thermocouple used for measurement of stack gas temperature shall be calibrated at least annually;

- (3) A leak check shall be performed after completion of the velocity traverse in accordance with 40 CFR 60, Appendix A, Method 2, part 8.1;
- (4) The average stack flow rate in wet standard cubic feet per hour shall be calculated for each velocity traverse using the collected data, and the stack gas molecular weight and percent stack moisture from the most recent Methods 3 and 4 measurements made at the subject source;
- (5) Corresponding to the time periods during which each velocity traverse was performed, 3 sets of stack flow data from the gaseous CEM system, calculated from the stack volumetric flow monitor or fuel flow meter in units of wet standard cubic feet per hour, shall be collected;
- (6) The average of each set of stack flow data from the gaseous CEM system shall be calculated;
- (7) The percent relative accuracy of the stack flow measurements shall be calculated as follows:
- a. "WSCFH, CEM" means the average of the 3 measurements of wet standard cubic feet per hour flow rate calculated pursuant to (6), above, from the gaseous CEM system;
 - b. "WSCFH, M2" means the average of the 3 measurements of wet standard cubic feet per hour as calculated pursuant to (4), above, from the data collected by Method 1 and Method 2; and
 - c. Subtract WSCFH, M2 from WSCFH, CEM, divide the difference by WSCFH, M2, and multiply the result by 100, as shown in the formula below:

$$\% \text{ Relative Accuracy} = ((\text{WSCFH,CEM} - \text{WSCFH,M2})/(\text{WSCFH,M2})) \times 100$$

- (8) The absolute value of percent relative accuracy shall be less than or equal to 10.0%; and
- (9) If the percent relative accuracy exceeds 10.0%, then the stack flow measurement of the gaseous CEM system shall be considered "out of control" until necessary repairs/adjustments are performed and the CEM system successfully meets the acceptance criteria specified in (8), above, as determined by a repeat audit.
- (e) In the calendar quarter in which neither the RATA specified in Env-A 808.08(a) nor the two RAAs specified in (d), above, are performed, the owner or operator shall perform:
- (1) An additional quarterly RAA; or

(2) Quality assurance of the stack flow rate or fuel flow meter which shall include at a minimum, as applicable to the device:

- a. A flow monitor differential-pressure sensing lines' leak check for low and high-pressure sides;
- b. A stack flow probe inspection, including removal and cleaning of the probe as necessary;
- c. A differential pressure transmitter/transducer calibration following the manufacturer's recommended calibration procedure; and
- d. A continuous flow-to-load-ratio or gross heat rate evaluation in accordance with 40 CFR 75, Appendix B.

Env-A 808.10 Audit Requirements for Opacity CEM Systems.

- (a) The owner or operator of an opacity CEM system required to meet the criteria of 40 CFR 60, Appendix B, Performance Specification 1, shall follow the audit procedure specified in 40 CFR 60, Appendix F, Procedure 3.
- (b) For a source that is required to install and operate a certified opacity CEM system that is not otherwise required by a federal rule, the system shall comply with 40 CFR 60, Appendix B, Performance Specification 1, and shall follow the audit procedure specified in 40 CFR 60, Appendix F, Procedure 3.

Env-A 808.11 Data Availability Requirements.

- (a) The owner or operator of a source with a CEM shall operate the CEM at all times during operation of the source, except for periods of CEM breakdown, repairs, calibration checks, preventive maintenance, and zero/span adjustments.
- (b) The percent CEM data availability shall be maintained at a minimum of 90% on a calendar quarter basis for all opacity monitors, gaseous concentration monitors, and stack volumetric flow monitors, or any substitute monitoring methods approved as part of the CEM monitoring plan required by Env-A 808.04.
- (c) The percent CEM data availability shall be calculated as follows:
 - (1) "VH" means the number of valid hours of CEM data in a given time period for which the data availability is being calculated when the plant is in operation;
 - (2) "OH" means the number of facility operating hours during a given time period for which the data availability is being calculated;

(3) “AH” means the number of hours during facility operation when the performance of quarterly audits as required by those procedures specified in Env-A 808.08 through Env-A 808.11, as applicable, require that the CEM be taken out of service in order to conduct the audit;

(4) “CalDT” means the number of hours, not to exceed one hour per day, during facility operation when the CEM is not operating due to the performance of the daily CEM calibrations as required by 40 CFR 60, Appendix F or 40 CFR 75, Appendix B, section 2.1; and

(5) To calculate the percent CEM data availability, multiply the sum of VH and CalDT by 100, and divide the result by the difference between OH and AH, as in the formula below:

$$\text{PercentDataAvailability} = \frac{(VH + \text{CalDT}) \times 100}{(OH - AH)}$$

(d) Sources that are subject to 40 CFR 75 or 40 CFR 63 shall calculate the percent data availability following either the method described in 40 CFR 75.32 or the method described in (c), above, as follows:

(1) The source shall describe in the CEM monitoring plan which of the 2 methods it plans to use for each opacity, gaseous concentration, and stack volumetric flow monitor located at the source;

(2) Once the source has chosen the method of calculation and the method has been approved and documented in the CEM monitoring plan, the source shall not modify its method of calculation without obtaining approval for the revision as specified in Env-A 808.04(f); and

(3) The source may use:

a. The method specified in 40 CFR 75.32 for all monitors, whether required by Part 75 or by other state or federal standards; or

b. The method specified in 40 CFR 75.32 for only the Part 75-required monitoring systems and the method specified in (c), above, for all non-Part 75 monitoring systems.

(e) If the owner or operator of the source discovers that it has failed to meet the percent data availability requirement in the previous calendar quarter or in the calendar quarter in which it currently is operating, the owner or operator of the source shall, in addition to the permit deviation reporting required by Env-A 911:

(1) Submit a plan to the department, within 30 days of discovery, specifying in detail the steps it plans to take in order to meet the availability requirements for future calendar quarters; and

(2) Implement the plan to meet the data availability requirements no later than 30 days after the end of the quarter of failure.

Env-A 808.12 Requirement for Substitute Emission Data.

(a) Any facility that uses the emissions data collected by a gaseous CEM system to calculate and report its annual emissions in accordance with Env-A 900 shall comply with (b) through (h) below.

(b) For any facility operating hour during which the gaseous CEM system has not collected a valid hour of CEM system data, the owner or operator shall submit to the department substitute emission data for those hours which has been generated using one of the following methods:

(1) The missing data substitution procedures specified in 40 CFR 75 Subpart D;

(2) If the missing data occurred during a period of steady-state operation, and not during a period of start-up, shutdown, or malfunction:

a. An average of the valid hours of CEM system emissions data collected prior to and after the period of missing data, where the number of hours before and the number of hours after are both at least equal or more than the number of missing hours of data; and

b. The substituted data is representative of the missing data, being at the same heat input rate, electric generating rate, or steam load;

(3) If the missing data occurred during a start-up, shutdown, or malfunction of the device, substitute data collected by the CEM during a similar period of start-up, shutdown, or malfunction, respectively; or

(4) An alternative method of data substitution that meets the following criteria:

a. The alternative method was included in the monitoring plan submitted pursuant to Env-A 808.04;

b. The alternative method provides for representative emissions for the conditions of operation of the device during the period of missing data equivalent to the substitution methods described in (1) through (3), above; and

c. The alternative method was approved by the department as part of its approval of the monitoring plan pursuant to Env-A 808.04.

(c) For CEM systems and emissions subject to the missing data substitution procedures of 40 CFR 75 Subpart D, sources shall follow those requirements for substituting emissions data in order to calculate emission totals or emission averages as required by 40 CFR 75.

(d) For CEM systems and emissions not subject to the missing data substitution procedures of 40 CFR 75 Subpart D, sources shall include substitute emissions data in the calculation of total daily, monthly, quarterly, and annual emissions generated by the permitted device to quantify total actual emissions.

(e) Substitute emission data shall not be used in the calculation of emissions totals or averages in order to determine or demonstrate compliance with emissions standards.

(f) For the period of time from device startup until certification of the CEM system, the owner or operator shall report facility emissions using the missing data substitution procedures as specified in (a) through (d), above.

(g) Substitute data shall not be included in the calculation of data availability.

(h) Any facility that uses EPA's Compilation of Air Pollutant Emission Factors, AP-42 as revised, or other emission factor chosen in accordance with Env-A 808.04, to calculate and report its annual emissions in accordance with Env-A 900, for a pollutant for which it also measures the concentration and determines the emissions using a gaseous CEM system, shall submit in the quarterly emission report required by Env-A 808.14 all valid hours of gaseous CEM system emission data, as defined in Env-A 808.01(j), for that pollutant.

Env-A 808.13 Quarterly Emission Reports.

(a) Within 30 days after the end of each calendar quarter, an owner or operator of a source with a gaseous or opacity CEM system shall submit an emission report to the department which contains the following:

(1) The information required to be submitted by 40 CFR 60, 40 CFR 63, or 40 CFR 75, relative to installation, calibration, operation and maintenance of a certified gaseous or opacity CEM system;

(2) All information included in the emission report shall be clearly indicated, labeled, and formatted such that compliance with all emissions standards to which the source is subject, can be determined and any periods of excess emissions, substitution of missing or invalid CEM data, CEM calibration, CEM maintenance, or startup, shutdown, or malfunction can be easily identified;

(3) The daily averages of gaseous and opacity CEM measurements and calculated emission rates in the units of the emissions standards;

- (4) For those sources subject to any emission standards that are averaged or totaled over a period of less than 24 hours, other than opacity standards that are averaged over less than a 24-hour period, the CEM data averaged and reported on the basis of the emission standard;
- (5) For those sources subject to any emission standard that is a rolling average of more than one operating day, the rolling average emission rate reported for each day during the reporting period;
- (6) Excess emission data recorded by the CEM system, including:
- a. The date and time of the beginning and ending of each period of excess emission;
 - b. The actual emissions measured by the CEM system during the excess emission;
 - c. The total amount of emissions above the emissions limit, or percent above the emissions limit, during the period of excess emissions;
 - d. The specific cause of the excess emission; and
 - e. The corrective action taken;
- (7) If no excess emissions have occurred, a statement to that effect;
- (8) A statement as to whether the CEM system was inoperative, repaired, or adjusted during the reporting period;
- (9) If the CEM system was inoperative, repaired, or adjusted during the reporting period, the following information:
- a. The date and time of the beginning and ending of each period when the CEM was inoperative;
 - b. The reason why the CEM was not operating; and
 - c. The corrective action taken;
- (10) For all “out of control periods” as defined in Env-A 808.01(j), 40 CFR 60, Appendix F, and any applicable federal requirement, the following information:
- a. The date and time of the beginning and end of the out of control period;
 - b. The reason for the out of control period; and
 - c. The corrective action taken;

(11) The date and time of the beginning and end of each period when the source of emissions which the CEM system is monitoring was not operating;

(12) The span value, as defined in Env-A 105, and units of measurement for each analyzer in the CEM system;

(13) When calibration gas is used, the following information:

- a. The calibration gas concentration;
- b. If a gas bottle was changed during the quarter:
 1. The date of the calibration gas bottle change;
 2. The gas bottle concentration before the change; and
 3. The gas bottle concentration after the change; and
- c. The expiration date for all calibration gas bottles used; and

(14) The percent data availability calculated in accordance with Env-A 808.11 for each gaseous, opacity, and flow rate monitor in the CEM system.

(b) If the source submits emissions data calculated on a basis of less than a 24-hour period, as is required by (a)(4) above, then the emissions data shall be submitted to the department in an electronic format.

(c) The quarterly report submittal shall be consistent with the information previously submitted in the CEM System Monitoring Plan and approved by the department.

Env-A 808.14 Valid Averaging Periods. The number of hours of valid CEM data required for determining a valid averaging period for the different emission standard periods shall be:

- (a) For a 3-hr emission standard period, 2 hours of valid data;
- (b) For a 4-hr standard emission standard period, 3 hours of valid data;
- (c) For an 8-hr standard emission standard period, 6 hours of valid data;
- (d) For a 12-hr standard emission standard period, 9 hours of valid data; and
- (e) For a 24-hr standard emission standard period, 18 hours of valid data.

(f) For any emission standard period longer than 24 hours, all valid hours of CEM system data collected during the period shall be included, except as specified in any rolling average established in a permit issued prior to the 2019 effective date of this chapter.

Env-A 808.15 Reporting Valid and Substitute Data.

(a) In accordance with Env-A 808.13 and Env-A 808.14, the owner or operator shall include in the quarterly emission report the emissions as measured by the CEM system and averaged to demonstrate compliance with the emission standards to which the source is subject.

(b) Even if sufficient valid hours have been measured by the CEM system necessary for calculation of a valid averaging period as defined in Env-A 808.14 above, the owner or operator shall still report for any invalid hours that occurred during the emission standard period the substitute data, as approved in accordance with Env-A 808.12, that will be used to determine the source's total emissions.

Env-A 808.16 Use of CEM System Data. The department shall use CEM system data either directly or indirectly for the following:

- (a) Compliance determinations;
- (b) Air quality impact analysis;
- (c) Air pollution dispersion modeling;
- (d) Control technology review; and
- (e) Emissions inventory.

PART Env-A 809 APPROVAL OF ALTERNATE METHODS

Env-A 809.01 Request for Approval of Alternate Methods or Requirements. The owner or operator of a source who wishes to obtain approval of an alternate method or requirement (proposed alternate) shall file with the department a written request, electronically or on paper, that contains the following information:

- (a) The name, mailing address, daytime telephone number, and e-mail address of the owner or operator requesting approval for the proposed alternate;
- (b) The name and location of the source at which the proposed alternate will be implemented;

- (c) The identity of the specified method or requirement and the reason why it can-not be used as directed;
- (d) A description of the proposed alternate;
- (e) The identity of the compound(s) that is to be tested or controlled or the equipment that is to be addressed by the proposed alternate; and
- (f) Technical data and information demonstrating that the purpose of the specified method or requirement will be achieved by the proposed alternate and that the proposed alternative produces results that are at least as precise and accurate as those produced by the specified method or requirement.

Env-A 809.02 Request Processing and Decision.

- (a) Within 60 days of receipt of a request that meets the requirements of Env-A 809.01, the department shall review the request to determine whether it meets the criteria specified in (b), below.
- (b) The department shall approve the request if the department determines that the proposed alternate:
 - (1) Achieves the purpose of the specified method or requirement; and
 - (2) Produces results that are at least as precise and accurate as those produced by the specified method or requirement.
- (c) The department shall notify the person who submitted the request and EPA of the decision in writing. If the request is denied, the department shall specify the reason(s) for the denial.

Env-A 809.03 Alternate Methods for Federal Standards. An owner or operator seeking approval of modifications to test methods or of alternate test methods for compliance with federal standards, such as those specified in 40 CFR 60, 61, 63, and 75, shall submit the request to EPA for approval.

PART Env-A 810 AIR POLLUTION CONTROL EQUIPMENT MONITORING PLAN; ADDITIONAL TESTING AND MONITORING * * *

* * * NOTE: EPA did not approve PART Env-A 810 AIR POLLUTION CONTROL EQUIPMENT MONITORING PLAN; ADDITIONAL TESTING AND MONITORING into the New Hampshire State Implementation Plan.

Appendix A: State Statutes, Federal Statutes/Regulations Implemented

Rule Section(s)	State Statute(s) Implemented	Federal Statute/Regulation Implemented
Env-A 801	RSA 125-C:6, XI	
Env-A 802	RSA 125-C:6, XI	
Env-A 803	RSA 125-C:6, XI	42 U.S.C. Section 7410 & 7502(c)
Env-A 804	RSA 125-C:6, XI	42 U.S.C. Section 7410 & 7502(c)
Env-A 805	RSA 125-C:6, XI	
Env-A 806 (also see specific section below)	RSA 125-C:6, XI	
Env-A 806.05	RSA 125-C:4, I(k)	
Env-A 807	RSA 125-C:6, XI & XII	
Env-A 808	RSA 125-C:6, XI	40 CFR 51 Appendix P, 60, 61, 63 & 75
Env-A 809	RSA 125-C:6, XI & XII	
Env-A 810 * * *	RSA 125-C:4, I(k)	